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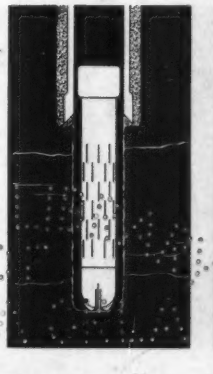

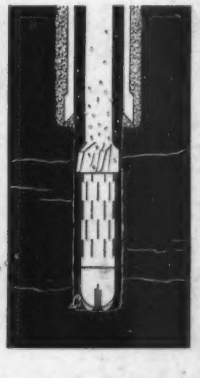

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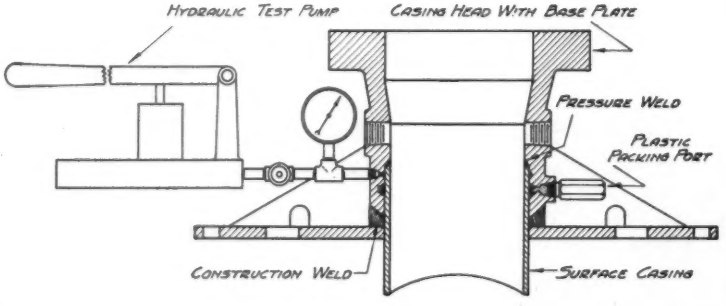

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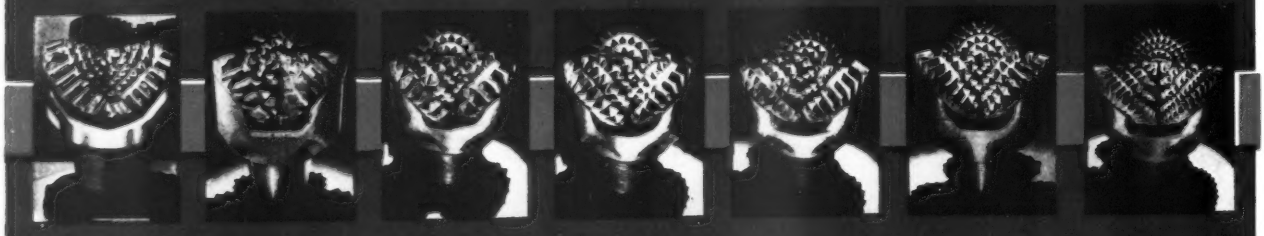

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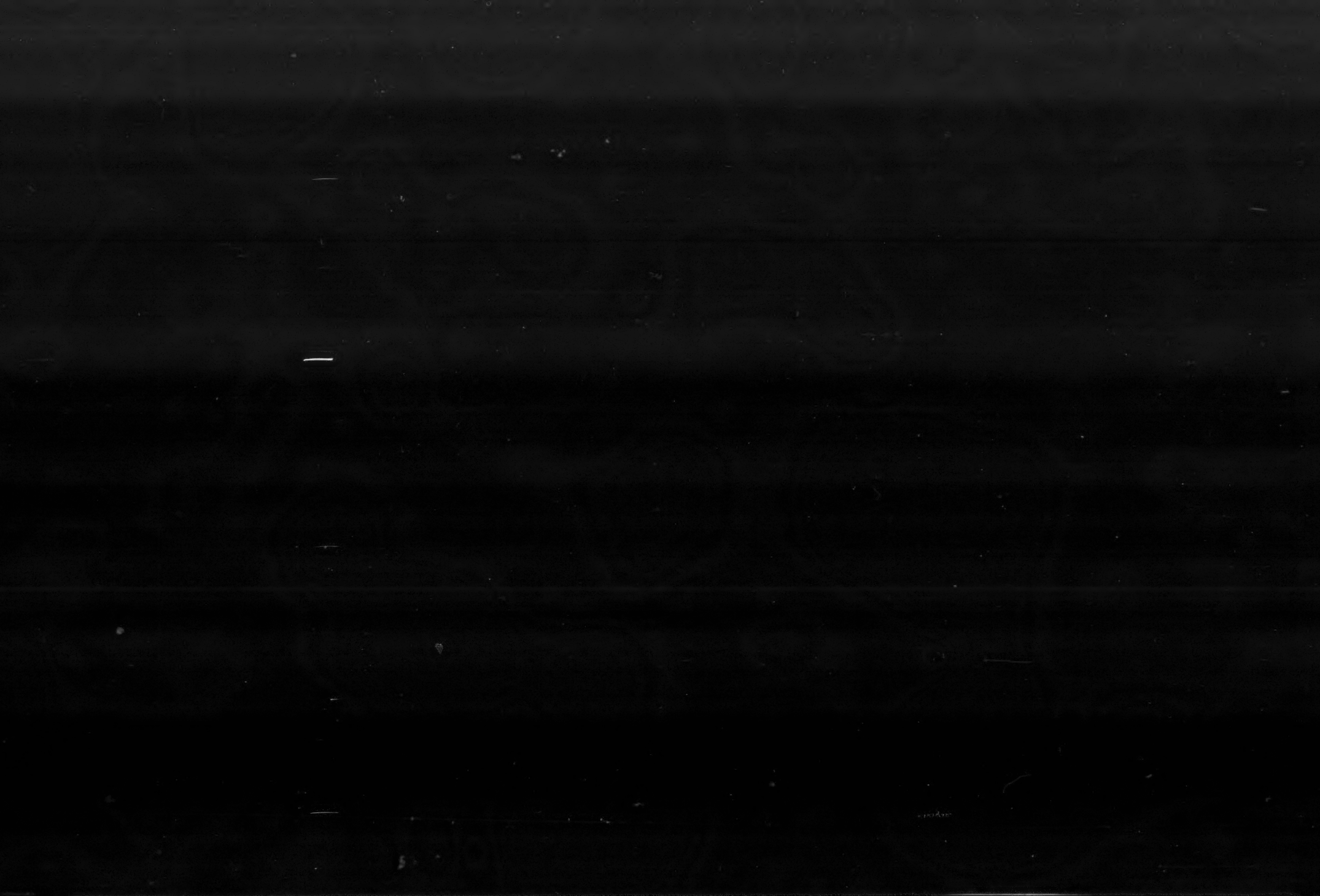


Practical Utilization of Rate-of-Penetration Drilling Data

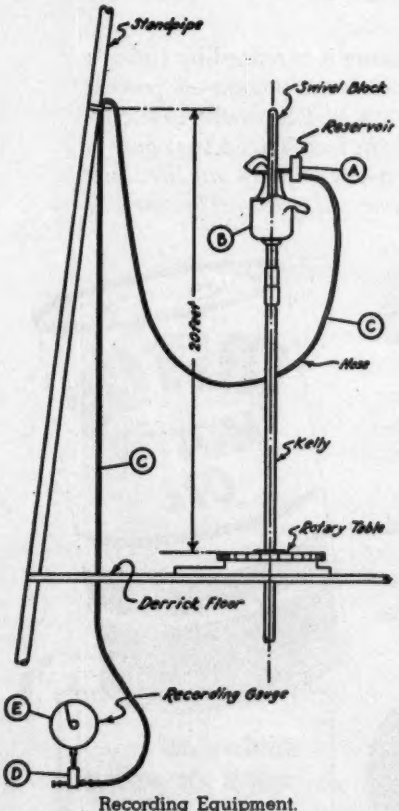
Mid-Year A.P.I.
1940 Meeting

By C. A. Yeatman*

ABSTRACT

The importance of "rate of penetration" achieved during drilling as a clue to a classification of the type of formation being penetrated has been recognized for some time. The reduction of this factor from a casual observation to a strict measurement definitely has increased its value not only as an indicator of the type of formation being penetrated by the drill, but also as an aid in the development of more economical drilling technique.

For some time the value of maintaining records relative to the rates of penetration during drilling operations has been recognized. The first driller to prepare a log of his operations grasped instinctively at the clue offered him by drilling-rate variations to make his rough classifications of the formations he was penetrating. His successors developed this understanding to a degree of astuteness that permitted them to speak with reverence-provoking authority of the sands and shales they were penetrating. A formation "break" as reported by a driller always has been, and still is, considered significant by the more scientific minds. Indeed, it is a matter of record that the driller never made a mistake in his classification of formations until electrical logging came into common usage.



Recording Equipment.
FIG. 1

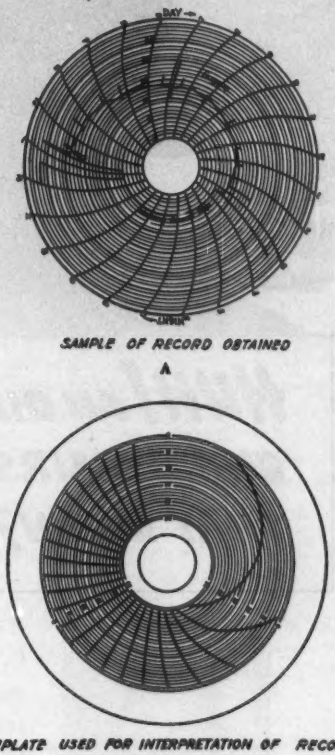
Unquestionably the driller has been a reasonably reliable source of formational information; he probably makes fewer mistakes than most scientists. Because such mistakes as he does make are generally due to lack of accuracy in the observations he makes, it often has been felt that the application of precision in the developent of the physical data related to drilling technique would increase measurably the reliability of the driller's log. Such thought as has been directed toward increasing the accuracy of observation invariably has recognized the significance of the "drilling-rate" factor; and, consequently, much of the resulting effort has been directed toward obtaining more accurate penetration data. These efforts, originating as tedious annotations of footages drilled through endless consecutive 15-minute intervals have culminated in the development of equipment which produces a continuous automatic record of the penetration rate during drilling progress.

The development appears logical: inasmuch as the relatively haphazard observations of the driller had proved to be of unquestioned value to the engineer, reduction of those observations to a precision basis measurably should increase their importance.

Recording Equipment

In attempting to develop equipment suitable for recording the information heretofore obtained through the cooperative observation of the driller, one immediately is struck with the fact that the driller is far more indestructible than any rival instrument possibly can be. This is an important point, as the word "perishable" has an unusually wide scope when applied to the appendages of a drilling rig. The success of the device used in obtaining the drilling-speed data presented hereinafter has depended largely upon its inherent simplicity and comparative ruggedness. This equipment is illustrated schematically in Fig. 1, and is described as follows:

A reservoir, **A**, is mounted on the swivel block, **B**, which forms a part of the drilling assembly. To the reservoir is attached a hose, **C**, which leads to a container, **D**, on which is assembled a standard pressure gage, **E**. The reservoir hose, and container assembly then are filled with water, and the drilling progress thereafter is portrayed graphically on the pressure gage, appearing there as a direct function of the recorded pressure, or head of water.



Record and Template for Interpretation.
FIG. 2

In spite of the striking simplicity and attendant sturdiness of the equipment, there developed in the early stages of its use a demand for as durable a hose as could be obtained. Consequently, the hose now used is well-fitted to withstand external abrasion. The foregoing requirement is discussed merely to indicate the importance of ruggedness as a feature of instruments placed in service on drilling rigs.

The type of record obtained with the device is shown in Fig. 2-**A**, which presents the automatic plotting of feet drilled vs. time that is developed. To interpret this automatic plotting, a template (Fig. 2-**B**) is used. The template, which is constructed of a transparent material, consists of a series of curves, plotted as feet vs. time, each of which depicts a definite drilling rate. To determine drilling speeds from the automatically plotted record, the template is superimposed on this record, and then is shifted until a close coordination between one

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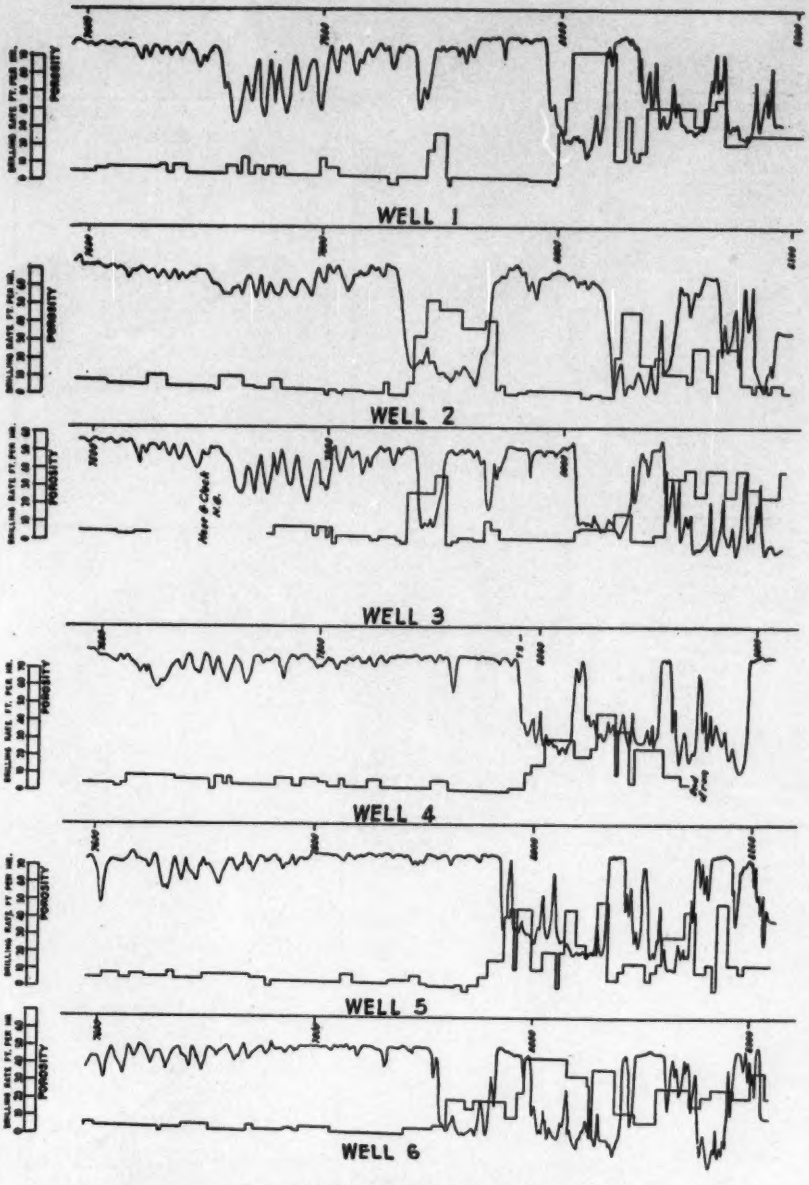


Comparative Data—Drilling Speed vs. Schlumberger Porosity.
FIG 3

of the template curves and the charted curve is obtained. The drilling speed then is considered as that which identifies the coordinating template curve.

The template includes also a series of concentric circles, the function of which is to facilitate the determination of footages drilled through each of the intervals on which speed determinations are made.

It is evident that the record continuously obtained at the drilling well is not one which directly presents rate of penetration, nor drilling speed, but rather requires a certain amount of interpretation that it may be presented in a useful form. Although this manifestly results in inconvenience, it is felt that this is more than offset by the relatively foolproof form maintained by the equipment installed at the drilling rig.

Comparative Results

First usage of the recording equipment was made in a field which presented relatively few structural complexities. Thus an appreciable thickness of hard shale overlaid a relatively soft oil sand, an obviously ideal condition for "drilling-speed" analysis. Under these circumstances, the recorded equipment very successfully located the top of the producing sands encountered in all cases in which it was used. This performance proved to be somewhat better than that turned in by the drillers, as the drillers failed in two instances to note the "break." Illustrative of the effectiveness of the "penetration" type of recording when used under favorable formational conditions, graphed data of drilling speed vs. depth as obtained at six consecutively drilled wells are shown in Fig. 3. For the purposes of comparison, these records include a simultaneous plotting of the Schlumberger "porosity" logs for each of the respective wells. The remarkable similarity evidenced between respective graphs readily is discernible in all cases, and needs no further comment.

In view of the initial successes obtained through the instrumentation of drilling speed, the recording device was applied to drilling operations conducted in a field presenting more complex physical aspects. In this second field no distinct differences in hardness of sand and shale bodies was evident; consequently, comparisons of drilling speed with Schlumberger "porosity" logs were disappointing, in that they lacked the precise definition found under the more favorable circumstances. Fig. 4 is illustrative of comparative data as obtained in two wells drilled in the less favorable field. Although definite correlation of the drilling-rate peaks obtained at well **A** at depths of 2,920 ft., 3,360 ft., and 3,380 ft. with similar modulations of the porosity log appears evident, no apparent correlation exists from depths of 3,425 ft. to 4,070 ft. The two logs for this well present a certain amount of similarity between depths, 4,020 ft. and 4,300 ft.

Well **B** evidences correlating peaks at depths of 3,355 ft., 3,900 ft., 4,775 ft., and 5,970 ft.; in the remaining intervals, however, little or no correlation appears to exist. In general, the results presented in Fig. 4 appear to be little more than encouragement for continued effort.

Analysis of Bit Performance

The possibility of using the drilling-speed recorder as a means of determining optimum economic footages for rotary-drilling bits is self-suggestive. Although a precise predetermination of the exact time for economic bit renewal does not appear to be practical, data obtained through the use of a drilling-speed recorder can be used conveniently in analyzing the prevailing bit practice of a given field.

The method of analyzing bit operations has considered the fact that drilling rates for a given bit generally diminish as the bit wears. The reliability of this consideration requires, of course, an attendant uniformity of penetrated formations. When uniform formations are drilled, the skill of the driller in gaging bit wear generally is evidenced by the worn bits which are removed from service. Worn bits, however, do not in themselves signify that the bit-replacement

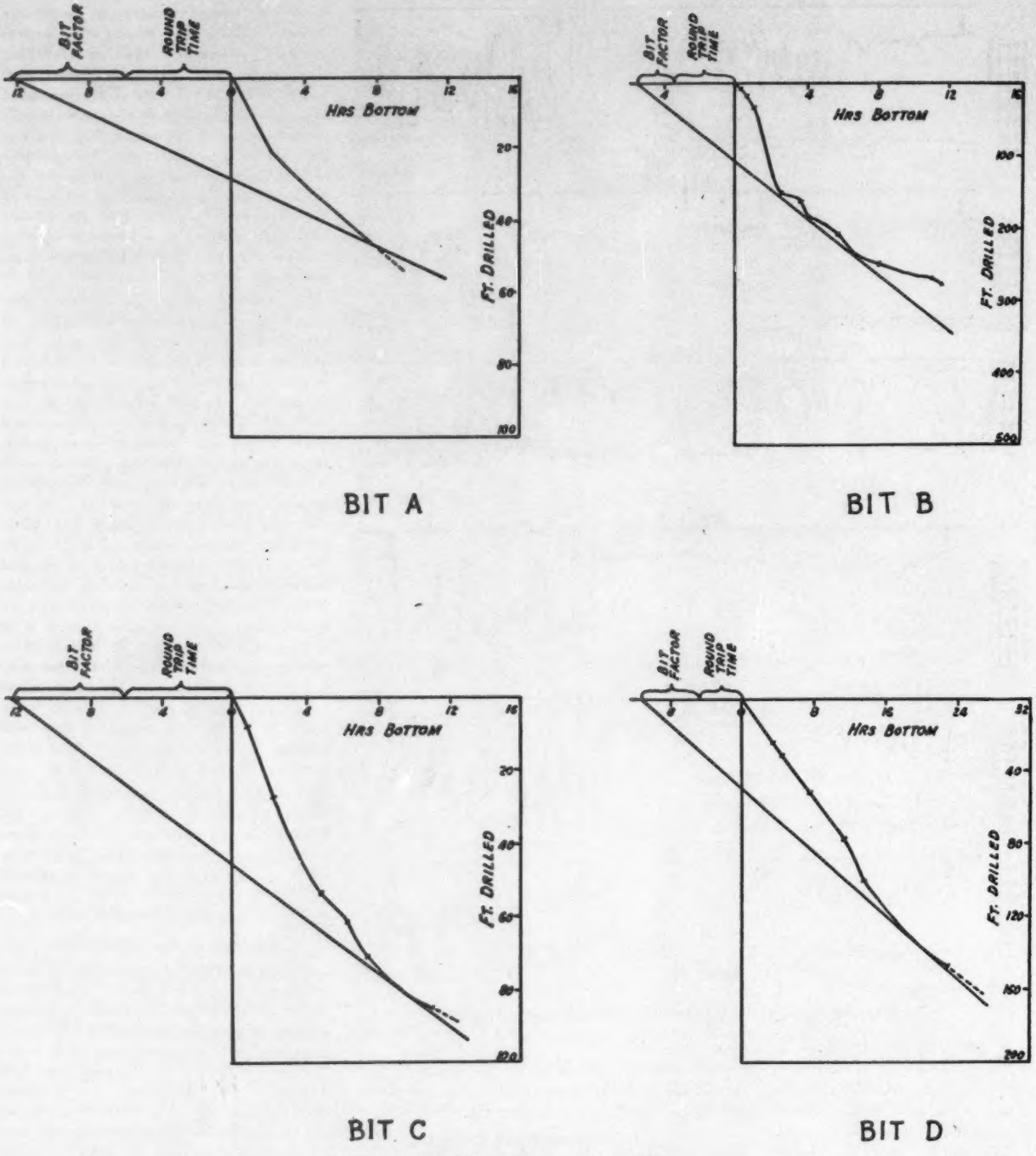


Figure 5. Graphic analysis of bit operation.

practice being followed is the most economical one, because factors which the driller cannot be expected to evaluate in detail may show that the drilling periods covered by these worn bits are too long or too short.

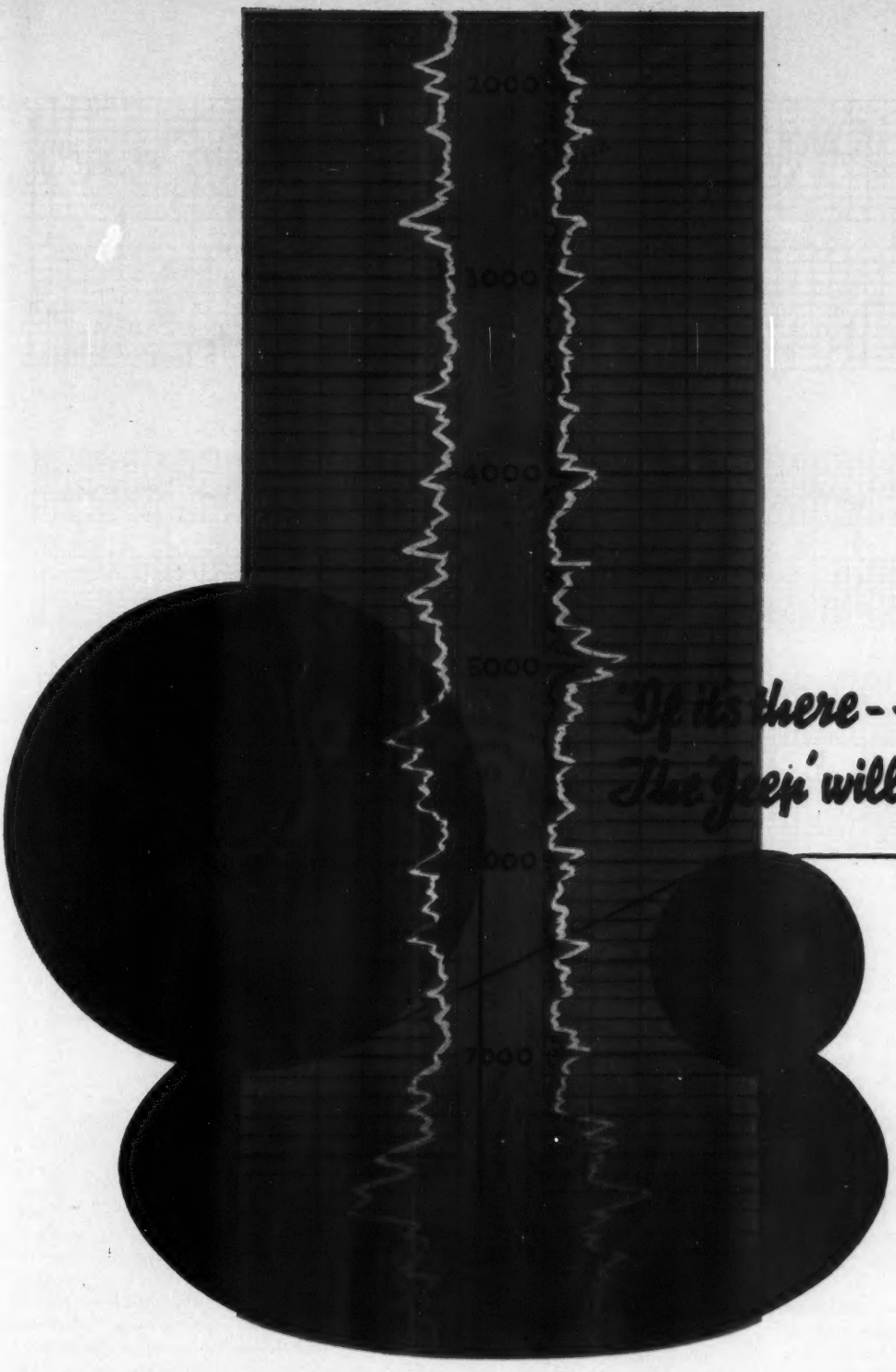
It can be demonstrated readily that, when relatively uniform formations are being penetrated, the bit should be renewed when:

$$R = \frac{E}{\frac{C}{K} + D + F}$$

Where:

R=rate of penetration, in feet per hour.
E=total footage drilled by the bit.
C=cost of the bit, in dollars.
K=cost of rig operation, in dollars per hour.
D=round-trip time, in hours.
F=drilling time on bottom, in hours.

When the performance of a given bit is plotted as hours on bottom vs. feet drilled, the time at which economy is served best by bit renewal evidently is portrayed graphically as that point on the plotted curve at which the tangent equals the expression $\frac{E}{\frac{C}{K} + D + F}$.



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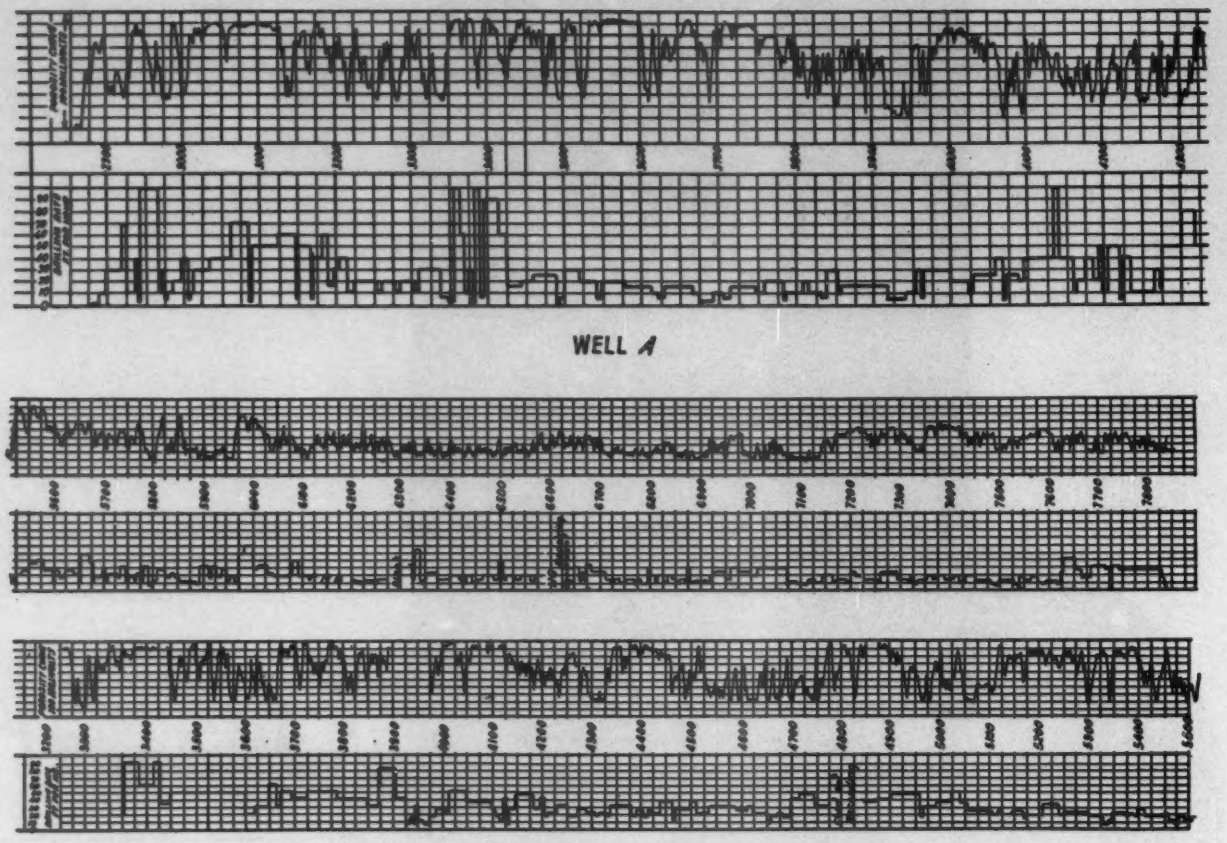

WELL A

WELL B

Comparative Data—Drilling Speed vs. Schlumberger Porosity.
FIG. 4

Application of the foregoing graphic analysis to bit operations is shown in Fig. 5. In the specimens here presented, the value $\frac{C}{K}$ has been noted as "bit factor." Of these exhibits, it is at once evident that bit **A** was renewed prematurely, bit **B** received excessive use, and bits **C** and **D** were renewed at very nearly the proper time for optimum economy performance.

In developing analysis of this type, the necessity of being provided with accurate data, such as can be obtained only through the conjunctive use of recording instruments, is at once apparent.

Conclusions

The use of recording instruments in conjunction with the analysis of drilling penetration speeds as yet has not been sufficiently extensive to develop a complete estimate of its usefulness. However, it definitely has evidenced the following points of value:

1. Its correlation with the results obtained from electrical logging is desirable, as it develops information while, rather than after, drilling operations are in progress; and, moreover, it aids in eliminating doubtful interpretations of formation changes.

2. It promotes "formation consciousness" with the drillers, and thereby encourages closer observance of formation changes.

3. It provides an accurate means of analyzing the economy of established drilling-bit-renewal practices.

4. It aids in determining coring intervals in wildcat wells. Furthermore, when ditch samples are collected, it has been of considerable value in the attendant correlation and classification of such samples.

Reports from Washington, D. C. indicate that the Navy Department and the Department of Justice are making every effort to establish a basis for claiming Federal jurisdiction over California's tidelands and oil producing submerged lands.

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Continental Oil Co. recently drilled a similar try at the extreme northwest tip of the imaginary line. Located in the northeast corner of sec.12,28-24, Continental's Community No. 1 found all sands barren to 13,028 ft.

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Collective Reasoning or Bargaining —

Fairness Assures Progress

By Richard Sneddon

In recent years there have been so many debates, discussions and arguments on the subject of collective bargaining that most of us are inclined to look on it as something at least comparatively new. Nothing could be farther from the truth! The principle, and not only the principle but the practice of collective bargaining are as old as the human race itself. At the very dawn of history, the redoubtable cave man sallied forth to bargain with a jealous nature in behalf of his little union—his family. He didn't ask for much, but he needed very badly that for which he asked, and he soon learned that a large knotted club was not only an effective instrument in establishing his claims, but was equally effective in guarding and securing such rights and privileges as he might acquire.

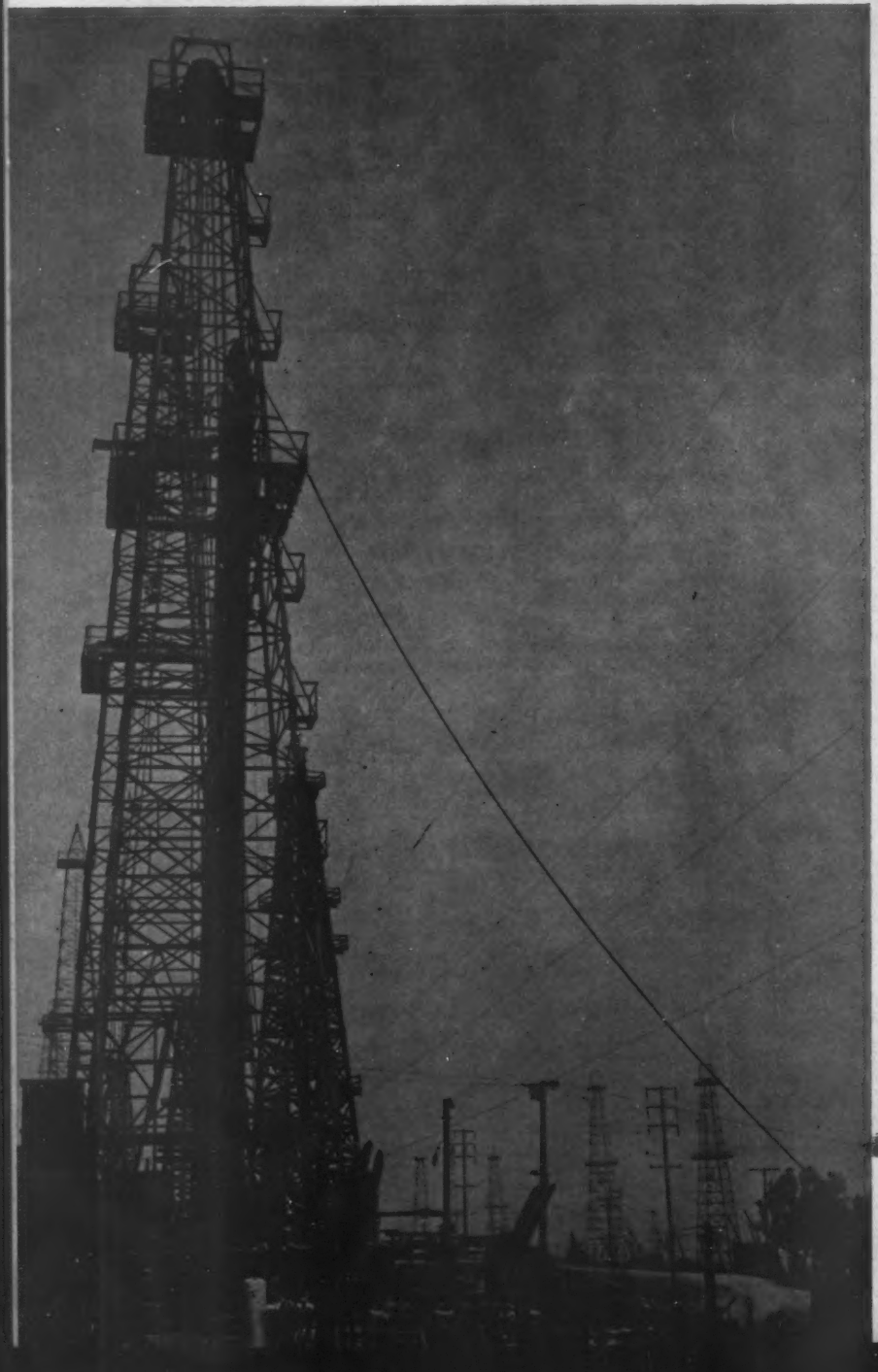
There was no constitution then. There were no statutes, no rules, no regulations of any sort, no ethics—merely the law of necessity. Human intellect was still so primitive that brute force took the place of reasoning and logic. The only thing the cave man had in common with his present day descendant was affection for his family. He utilized the one means his limited intelligence could devise to provide for, and protect them through the vicissitudes of a distinctly precarious existence.

First the families amplified their own meager store by looting the supplies of their neighbors. Then came marauders from distant points, and tribes were formed for protection against the common enemy. Tribes multiplied into peoples, peoples into nations—lesser and greater unions, if you please, organized to define the conditions of their existence, and with spokesmen to expound their doctrines and express their demands at inter-tribal or international conference.

Meantime, down through the ages, every association, every service and social club, every aggregation of individuals that was ever formed, no matter what its aims, was in effect a union, the members of which were banded together for the purpose of collective bargaining. These unions bargained with society or other organizations for such concessions as they believed might be to their advantage. They appointed their delegates to conventions at which they outlined plans and platforms for the furtherance of their aims, and then by some means, physical or otherwise, contrived to achieve these aims.

What is our Congress today but a house of delegates, each representing a collective organization of American citizens? Each pledged to strive in the interests of the members of his particular group. And the whole representing the Union of the States of America. If there is anything new under the sun, it is not collective bargaining. That has always been with us and will always be with us. In principle it is as sound as the proverbial bell, but in practice—well, that is something else.

It seems unlikely, however, that the process will ever accomplish any lasting good until we substitute "reasoning" for "bargaining." That word "bargaining"



Kern Oil Co.'s Monterey No. 28, in Montebello oil field, is rigging up to deepen. Note the interesting design of the exhaust mufflers in the center foreground.

20,000 feet?

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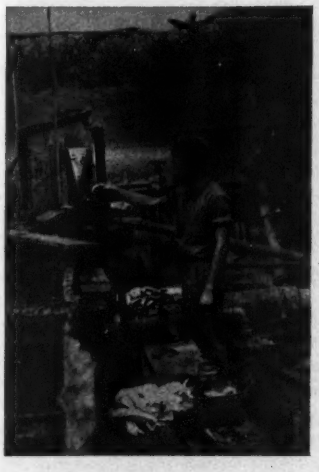

Baroid Service Engineer testing mud at the well.

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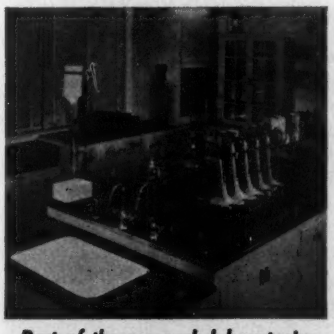
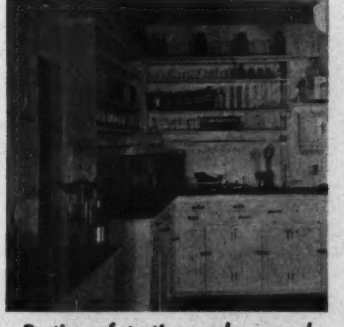
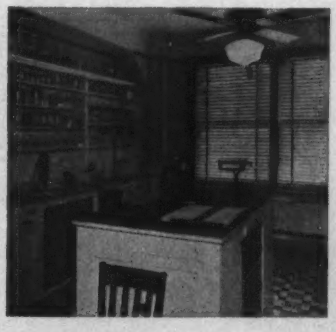


Part of the research laboratories at Los Angeles.



Portion of testing and research departments in Tulsa laboratory.



Section of the Houston laboratory.

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has an irritating sound. It immediately suggests some sort of a horse trading proposition. It implies bickering and bartering to get from someone who is unwilling to give, something for which we are unwilling to pay the proper price. Unquestionably collective bargaining as practised in many past conferences of managers and employees was anything but conciliatory. These meetings were horse trading jousts all right, in which one side sought to justify an unreasonable demand, while the other sought just as strenuously to ridicule any kind of a demand. These were the so-called conferences that ended in strikes, lockouts, general discomfort, and great financial loss. Both sides went into the battle, pledging themselves and their cohorts that regardless of what might happen at the meeting place they would never yield. How could we expect anything worthwhile to develop out of such discussions? They were not discussions—they were assertions, ultimatums delivered by each to the other, all arranged and rehearsed prior to the meeting and delivered exactly like schoolboy recitations. They were horse trading jousts—but they lacked these essentials of a good contest. The seller wasn't the legal owner of the horse, and the buyer was just an agent acting under instructions that he didn't dare to disobey.

There is no question, on the other hand, that collective bargaining in other instances has brought great benefit to industry and its personnel. Working conditions, wages, and the social status of the worker have all been immeasurably improved by its agency. Executives and managers have been aroused from lethargic disregard to active interest in the welfare of their employees. Employees have been awakened to the fact that their own success is contingent upon the success of the concerns by which they are employed. There is a tendency towards a more co-operative attitude on both sides, a change that is decidedly promising for the future of industry and all concerned.

Drilling for Sam Brooks on the Columbia well in Montebello are, left to right, C. L. Mohr, Fred Frank, E. R. Mather, Neil Muir, and Driller Sid Dewey.

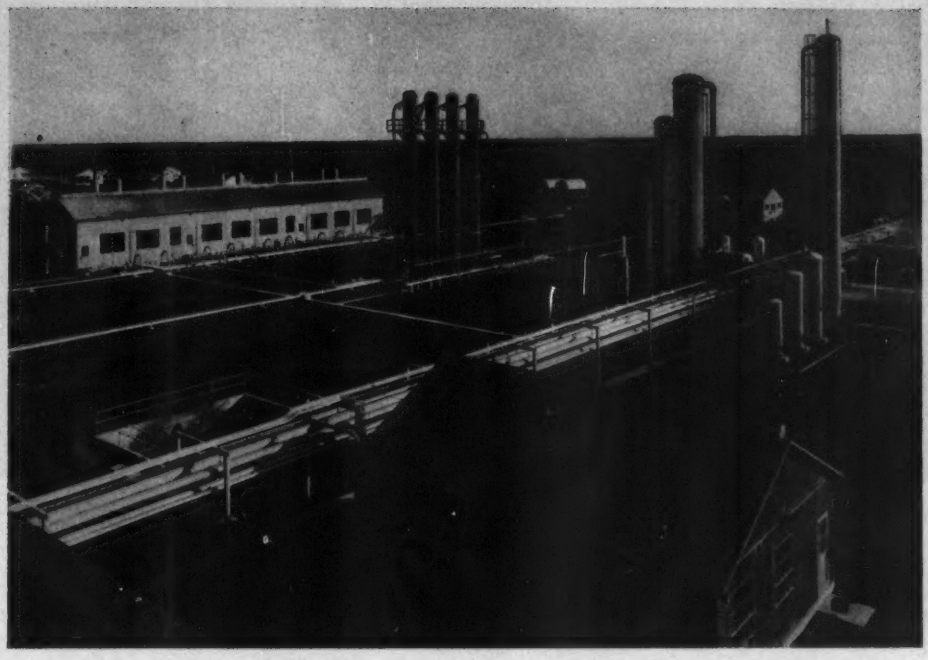
The transition towards the ideal condition and the ideal relationship, however, is far from complete. In some respects the changes have been carried too far. In others they have not been carried far enough. All the executives, managers, and employees have not awakened yet to their mutual and inescapable relationship. There are managers who are still blind to the necessity of sympathy and understanding, and there are workers who would still use the methods of the cave man to enforce what they like to call their rights.

Returning again to the benefits that have been derived both by managers and workers as a result of their joint negotiations. To what do we really owe improvements in working conditions, better hours and wages, and a better understanding on both sides? Certainly not horse trading. No, every step we have made towards the cementing of a common respect and regard between the various forces of industry has been brought about, not by collective bargaining, but by collective reasoning. And all the good that ever will come out of industrial negotiation and conference must be based on sound logic and genuine mutual respect.

The union of men can only be enduringly effective when the union is contrived for a worthy purpose. Every little band of pirates that roamed the seas in bygone days was a union, designed for the openly avowed purpose of theiving and plundering. They negotiated with cutlasses and guns, and although they thrived for the moment, they have gone the way of all things that are inconsiderate and irrational. At the present

Preparing to deepen Kern Oil Co.'s Monterey No. 28 in Montebello's new "8-3" play are, left to right, J. P. Carr, W. M. Ries, R. E. Fife, J. Gioia, and Driller John McQuaid.

140 million cu. ft. 1500 lbs. w. p. Absorption Unit and Pressure Maintenance, designed for 2500 lbs. Recently completed in Corpus Christi area.



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On Rowena No. 2 in the new Rosecrans activity are, left to right, Tex Baird, Ray Carter, and Ace Taylor. At right are Milt Yarberry, driller on Rowena No. 2, and P. C. Thompson of H. C. Smith Oil Tool.

time the German nation is a gigantic union, organized to conduct a campaign that will perish inevitably, because its purposes and aims are based on selfishness instead of contribution, ruthlessness instead of humanitarianism. Its organizer and spokesman is not actuated by a desire for the common good, but by the lust for vengeance, which countless examples of history have shown us to be self destructive. All the treaties drawn up and enforced by armies of pillagers and scheming diplomats, are being torn to pieces one by one. Right is the only thing that can possibly endure, although it seems at the moment to be going under. I predict that the German nation will yet realize the futility of force as a builder of perpetual peace and prosperity, and turn to the only effective medium of negotiation—collective reasoning.

Call it what you will, collective bargaining or collective reasoning, but it is certain that all the good derived by the forces of industry from deliberation have come when the several parties to the disputes have settled down to fair and impartial discussion of their joint problems, and have acted according to the dictates of common decency, and common sense.

The whole world has been built on this process of collective bargaining. National boundaries are fixed in this manner. National behavior is contingent on collective agreement. The laws of the United States are drawn up and administered by the delegated authority of collective agencies. Everything we do socially or industrially must be on a collective basis or it fails. If we as individuals strive merely for our own individual comforts we arrive nowhere. It is only when we are actuated by a genuine concern for our fellows that we accomplish and achieve. We can only hope then for an effective utilization of this instrument in industry, when we are prepared to carry on in a rational manner, and with due respect to the needs of all the parties involved.

There are certain primary requisites to the adequate functioning of such a system that must be immediately conceded: Obviously there must be a break down of the old idea that the negotiators are in opposition. Debates and discussions are most productive when they are cooperative, and least productive when they devolve into verbal battles between opposing wits. Under these latter circumstances the **bon mot** becomes more important than the fundamental purpose of the conference.

The forces of labor should be controlled by individuals who are sufficiently informed and sufficiently unselfish to look calmly and analytically at any situation. They must realize the true responsibilities of executives and managers. Managers must on the other hand be understanding and sympathetic, must realize their dependence on the worker, and the worker's right always to a hearing. Together by calm presentation of facts and careful weighing of their values, just decisions must be reached, and representatives must have the courage to abide by such decisions.

Doing their torch work for American Pipe & Steel on the St. Anthony lease in Rosecrans are, left to right, Orrie Bush, Les Dean, and Richard Cundiff.

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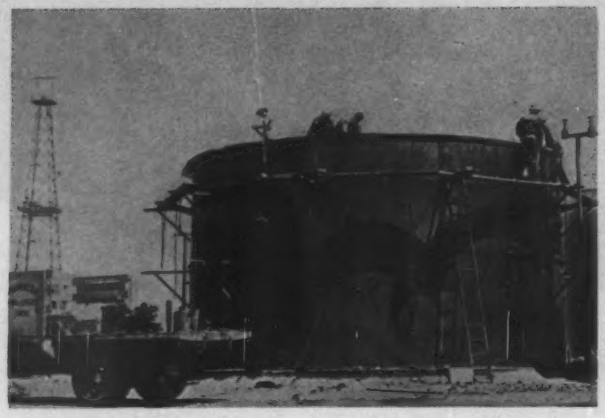


St. Anthony Oil Corp.'s lease in Rosecrans is bustling with activity. Across from new lease headquarters tankage is spreading over a wide area. At right, I. L. Bertrand and Anton Ackerson are building a platform for equipment on the lease.

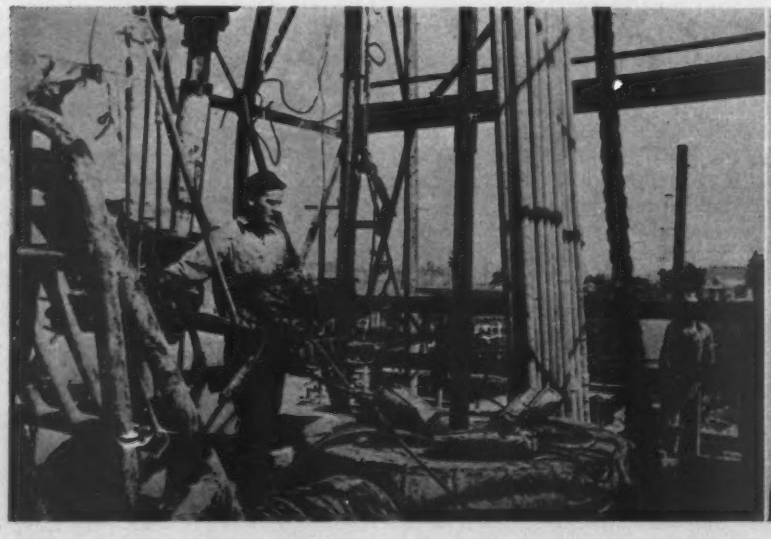
Both sides must comprehend fully their joint responsibility, and the fact that only by a harmonious relationship can they hope to succeed as an entity. There must be tolerance and patience in these negotiations. All the errors of 2000 years can't be corrected overnight, and careful deliberation is required in order that such changes in existing procedure as may be instituted can be carried out without disastrously upsetting the whole social and economic orders.

Industry and the conception of relationship in industry have grown tremendously in recent years, and the adjustments that have thus become necessary are not going to take care of themselves by some simple evolutionary process. They can only be properly made through meticulous study of all the factors involved, and through the application of good sound sense.

Now with regard to collective bargaining as performed in industry at the present time, we have seen that the process has been in effect in practically every phase of our industrial and social existence almost since the beginning of history. We have seen, also, that when carried on ethically, and to the exclusion of personal gratification, it has succeeded in raising not only the standard of working life, but also the social status of the individual. Why then has it been necessary to enact legislation to establish it as a factor in American industry? Simply because most of us can not be motivated by anything short of a man-made law. You have heard the story of the man who continued to puff at his pipe despite the warning of a "No Smoking" sign, because it didn't say "Positively." There are many people just like that. There are owners and managers who can only be excited by the enactment of statutes. There are workers who have no time to reason out a peaceful solution to their problems, and think they can acquire their own peace by upsetting that of everyone else. They are both as wrong as anyone could well be, but they are real nevertheless, and to them and their prototypes we owe the enactment of laws legalizing a procedure that common logic told us long ago was desirable.

Industrial development has taken place in spite of, not because of these people, and it is a fortunate thing for humanity that there were some managers and workers whose behavior was dictated by the ordinary laws of sympathy and understanding. They are the builders whose actions have been expressed in incalculable benefit to society, if not in glorious recognition for themselves.

Because of those who allowed themselves to be stirred by gusts of overemotionalism, or lulled into false security



At left: going down for more of that shale and oil sand in Mission's Rosecrans extension test. At right: Douglas Horne, of Crossley Transportation Co., is loading up with Rosecrans extension field oil.

by the soporific of self-satisfaction, we have the laws, and now we must administer them to the greatest good of the greatest number, and amend them when it becomes obvious that they display partiality. There can be no place in an honest system for vengeance or retribution. We must look on the past as a laboratory, in which we have tried and tested multitudinous schemes for the improvement of the social and industrial plans, and from which by judicious selection we can choose much that is worthwhile for our future welfare.

If, on the contrary, we should look back on a battlefield, whereon for centuries employers and workers have been sworn enemies, heaping anathema and insult on each others heads, our collective bargaining system is doomed at the start. We must be ready to discard the implements of war and with them every vestige of spleen. We must look on the past as a guide to the future and not as an embittering experience. When we can do these things, and then sit down man to man and talk over our mutual problems calmly but searchingly we shall be engaged in collective reasoning, our labor troubles will vanish, and industry will be the cooperative enterprise it ought to be.

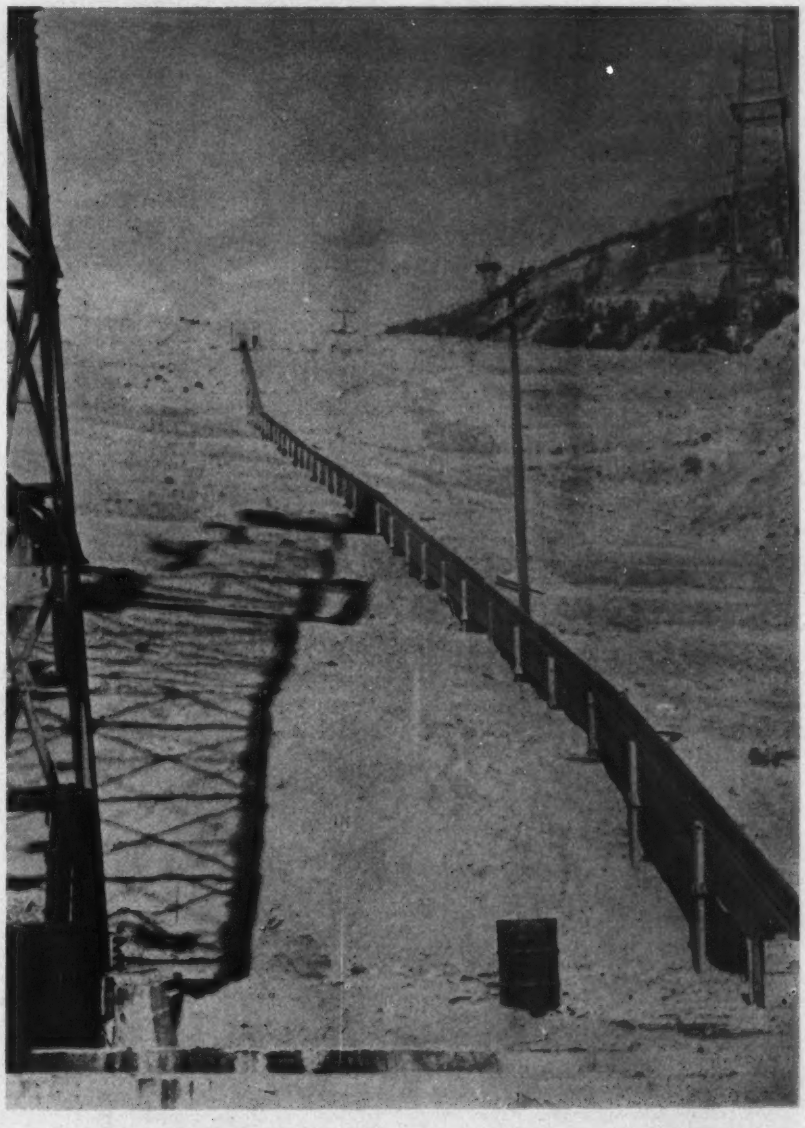
Industry, as we have indicated, has made a great deal of progress through the right kind of negotiation. Not so long ago in many branches of business, day workers plied their tasks ten hours a day, seven days a week. Today because of shorter hours and higher wages, industry is producing more than it did in the old days of perpetual work. At the same time the public has benefited by being able to secure higher quality merchandise at lower prices.

Compare almost any type of industry now with its comparable equivalent twenty years ago, and it is at once apparent that there has been improvement not only in the conditions of work, but also in the quality of the workmanship and the reward of the worker. There are those who will argue that this was brought about by the sheer altruism of employers, but while there are altruistic employers, it is by no means a general qualification. This much is certain, however, the employer who displays a desire to be honest and fair in his dealings with workers will have little to worry about in the way of labor relations.

For many firms the legalization of collective bargaining merely meant Government endorsement of a system they had always practised. There are unfortunately some features in the present setup that appear objectionable on justifiable grounds, but there is every reason to believe that the law will eventually be revised to make it eminently fair to all those affected. Meantime, if those affected will just be eminently fair to each other, we need have no fear of the final outcome.

At this moment, labor organizations and employers alike have a public relations job to do, before either of them can expect the sympathy for which they are bidding. In the long run, the life blood of industry is the purchasing power of the public, and its sympathy is essential to the success of any industrial enterprise. Labor organizations will be well advised then to demonstrate to the public by precept and example that their mission is to cooperate with owners, in order to develop and put into practice those measures that are at once mutually advantageous to all the forces of industry—and least disturbing to the peace of the public. Employers can similarly cultivate public approval by the exhibition of an equally cooperative attitude, and an honest anxiety to find mutually satisfactory solutions to their personnel problems.

One last thought—there are two sides to every bargain. The concessions granted by one side are contingent on the future behavior of the other. But if experience shows that any agreement, due to subsequent development, is reacting unfavorably to one party or the other, and the terms of the agreement have been given a fair trial, then collective reasoning should be brought into play. Adjustment must be made and the contract restated on a more equitable basis. Too often employers or employees have tried to hold each other to collective



Tide Water Associated has mud rehabilitation centers for various groups of wells drilling in Ventura. Here shown is one of the many mud conduits which ramble over the steep hills of the field.

agreements that satisfied conditions at the time they were made, but later proved obviously unfair to one or the other. That sort of stand is far from being conducive to a cooperative, mutually profitable relationship. On one basis only can the personnel of industry progress in peace and harmony, and that is with a program of collective reasoning and correlated doing.

After all, we are not seeking to adopt a new system. We are trying to profit by our experiences with a system that is as old as the human race itself. Adam and Eve, as the delegates of mankind, made a collective bargain with their Creator away back in the Garden of Eden, but they were too weak to carry out its terms, and that is why we are having all this trouble today.

The greatest piece of collective bargaining and the most effective ever known was made by a simple Galilean, who voluntarily offered Himself to the scorn and abuse of all the skeptics, submitted to indignity and torture beyond conception, and finally endured the indescribable agony of slow death, in order that His fellow men might have something for which to hope.

When workers and employers in the past have been motivated by that same spirit of unselfishness and helpfulness their collective reasoning has been productive and industry has prospered. When workers and employers are again so actuated in the future, industry will achieve further successes.

Automotive Engineers Push Developments

That the next great step in automotive progress in this country will be the development of principles and products making toward greater economy in upkeep and operation, resulting in marked benefit to the public, is the prediction of four automotive and lubricants specialists of New York, who have been conducting meetings throughout the Pacific Coast territory.

This trend is already well under way, and announcements of the achievements of engineers in this direction will soon be made, according to George A. Round, chief automotive engineer for Socony-Vacuum Oil Co., one of the distinguished group of visitors. This group also includes B. C. Voshell, in charge of the technical division of this company's lubricating department; W. G. Godron, the company's chief industrial lubricating engineer; and John Briggs, in charge of indirect marketing between Socony-Vacuum and its affiliates.

Revealing that the development of special type lubricants has been one of the chief factors in automotive progress, a factor which has actually made improvements possible, the four technical experts first conducted sessions in Los Angeles under the sponsorship of General Petroleum Corp., and attended by hundreds of district and branch managers, wholesale agents, and sales representatives of this Pacific Coast major oil organization.

Headed by their host on the occasion of this western trip, H. W. Taylor, General Petroleum's engineer in charge of lubricants and specialty marketing, the group left Los Angeles for meetings to be held in San Francisco, Portland and Seattle.

Speaking on the subject of most general public interest, Chief Automotive Engineer George A. Round said:

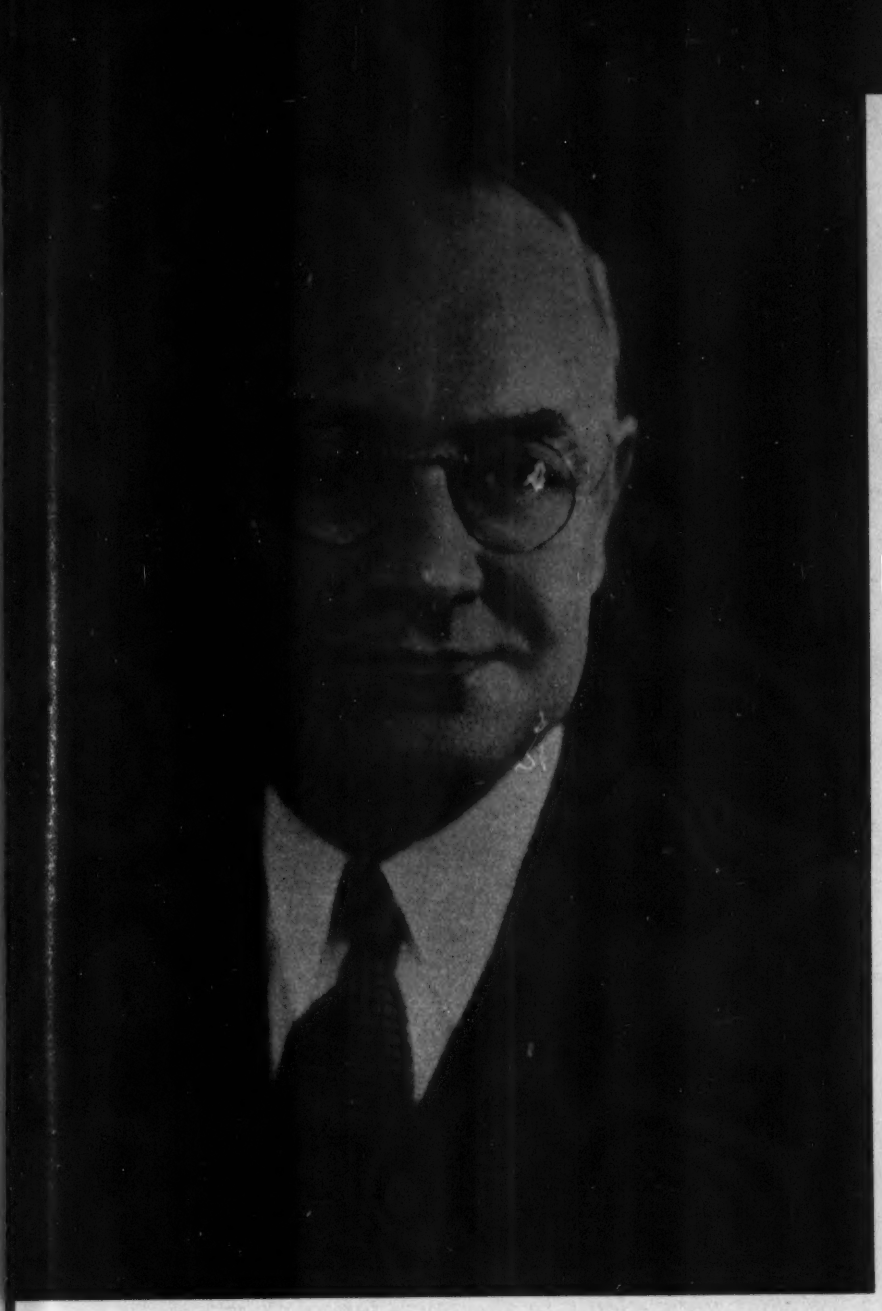
"Automotive manufacturers have now gone just about the limit in developments toward comfort and style. Therefore, the next move is toward more economical operation, a development already under way. In the forefront of this movement, lubricants have been created by our company, in co-operation with automotive engineers, to meet the requirements of new type, more economically operated motors. Interesting announcements may be expected in the near future."

Conducting meetings in Los Angeles and throughout the Pacific Coast area to reveal the latest information about remarkable developments in the lubrication and engine-building fields, is this group of New York executives, who have been visiting the West as representatives of the Socony-Vacuum Oil Company. Piloted throughout the marketing area by H. W. Taylor, engineer in charge of lubricants sales for General Petroleum Corporation, they have addressed large groups of General's district and branch managers, agents and salesmen. From left to right, the executives are: George A. Round, chief automotive engineer; W. G. Godron, chief industrial lubricating engineer; B. C. Voshell, head of the technical division of Socony-Vacuum's lubricating department; and John Briggs, in charge of indirect marketing between parent company and its affiliates.

W. B. Bustard, from Westinghouse Electric & Mfg. Co.'s Arizona headquarters, is now in the Los Angeles offices of the company, 420 South San Pedro St., as assistant to Harry Fenton, in Oil Industry Sales.

New Shiells Well Is Small Producer

Smaller than expected was the settled production rate in Santa Clara Petroleum Co.'s Santa Clara No. 1 on Calumet property in Shiells Canyon. Completed in the interval between 2388 ft. and 3245 ft., production dropped rapidly from a relatively high initial to around 50 bbls. a day and the liner is being reperforated in an effort to improve the yield.



William H. Berg
1882 - 1940

Standard President Dies

William H. Berg, president of the Standard Oil Co. of California, died at his home at Hillsborough, near San Francisco, June 26, of a heart attack. He had been confined to his home for a week. He is survived by his widow, Mrs. Irene L. Berg, and a brother, Walter Berg of Iowa. Mr. Berg was a director of the American Petroleum Institute, California Oil & Gas Association, the Golden Gate International Exposition, and was active in other organizations.

Mr. Berg was elected president of the Standard Oil Co. of California by the board of directors on Dec. 9, 1937, succeeding K. R. Kingsbury.

Mr. Berg's whole business life was with this organization. He joined the company in 1902 as a stenographer, and during the ensuing 35 years rose step-by-step to the office which he then assumed. It was in 1902 a youth of twenty, that he came to California from Iowa, seeking employment and a career. In the simplest possible manner he came to an office of the company and asked for a position, without introduction and without acquaintances. He sought a job as a stenographer. Fortuitously, owing to an illness of an employee, there was temporary work for him to do. He soon acquired a permanent place and the company had acquired a future president.

Mr. Berg's thirty-eight years of service coincided with the great expansion of the company. He served in various departments of the company successively, winning his way. In 1908 he was appointed chief clerk of the Producing Department, with which he since was closely identified.

Mr. Berg's services in the Producing Department were not all in the Home Office. In 1916 he became general superintendent of the northern division, with headquarters in Bakersfield. Later he was advanced to be assistant manager in San Francisco, being placed in charge of acquiring land and leases. In 1920 a Land and Lease Department was organized and he became its manager. The following year he was made general manager of the Foreign Crude Oil Production Department. By this time the company had decided to seek oil in foreign countries. His work took him to various countries in Latin America. The company's exploration program was carried on in numerous foreign countries, the greatest success being achieved on the Island of Bahrein in the Persian Gulf where in 1931 a major oil field was discovered.

It was in January, 1924, that Mr. Berg was made a member of the board of directors. Three years later, in March, 1927, he was elected a vice-president and on December 9, 1937 was elected president. His whole training, combined with his exceptional ability, made his selection for the presidency a natural one.

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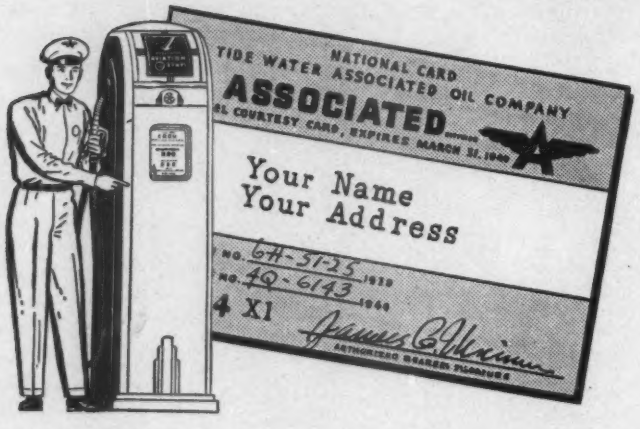

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Field Development

San Joaquin Valley

Western Gulf Completes Second Paloma Well

Western Gulf Oil Co., co-discoverer of the Paloma field with The Texas Co. on jointly held acreage, completed it's second well, KCL No. A-74-3, flowing an estimated 1000 bbls. of 53 gravity, condensate through a 54/64 in. bean along with 6,750,000 cu. ft. of gas. Beaned back with an 18/64 in. orifice, the well is flowing at a 625 bbl. rate with 2125 lbs. pressure on the rig and 1850 lbs. on the casing.

Spudded on October 9th, 1939, in sec. 3,32-26, the well drilled to 11,216 ft. completely penetrating the Stevens section. Finding the extreme bottom portion of the zone unpromising, 5¾ in. liner was landed on a plug at 10,698 ft. and a series of gun perforations and tests made up hole to the bottom of a perforated section from 10,085 to 10,285 ft. These tests indicated that the lower horizons were valueless, so the well was plugged to 10,287 ft. where it is at present flowing from the upper Stevens.

The current completion is from substantially the same section that was taken in the discovery well.

Ohio Oil Co. is rigging up to drill its second well, KCL No. 23-3 on sec.3,32-26.

Conoco Drills Jacalitos Try

Seeking an accumulation in the sediments believed potentially productive along the Jacalitos fault in the Kreyenhagen Hills area, Continental Oil Co. is drilling Kreyenhagen No. 1 on sec.4,22-16.

Last reported at 5625 ft., the well is in a sparsely drilled area more than a mile and a half northeast of Superior Oil Co. Mantes No. 1 which bottomed in Domengine sands at 7838 ft. in 1934. If this horizon, which is similar to the famed Gatchell sand at Coalinga, can be found in a fully closed stratigraphic trap it may chalk up a major field discovery for Continental.

Shell Oil Cements Small Bore Casing

Leaders in California slim hole drilling, Shell Oil Co. has achieved some sort of record by cementing perhaps the longest strings of 4½ in casing in California.

Drilling to a pre-determined level, where the sand thickness and characteristics are well known and where production problems are comparatively simple, Shell Oil Co. has perfected a technique in slim hole drilling that effects substantial savings in cost without sacrificing speed or efficiency. This technique embraces the landing and cementing of 4½ in. water string at 8107 ft. in its KCL No.A-21-30 at Ten Section. The common belief that drilling with small bits retards speed and induces a drifting hole is refuted by the fact that straight "slim hole" was made to 8190 ft. and casing cemented in only 34 days, while the best time made by the large bits under "pressure" is 27 days. Diameter of the surface casing in No. A-21-30 was 8⅝ in.

Exclusive operators of the Ten Section

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
	Fresno County				
Cantua Creek	Logan, J. E., Jr., Yearout	44	26, 16-14	8120	Drilling
	The Texas Co., S.P.	1	23, 17-15	10116	Plugged 9356
Coalinga	Lewis, C. H.	1	18, 21-15	2298	Idle
	Section 30 Oil Co.	8	30, 19-15	377	Drilling
	Shell Oil Co.	45-2	2, 20-15	3745	Pumping
	Tidewater Assoc. Oil Co., Guardian	23	2, 20-15		Rig
Jacalitos Hills	Continental Oil Co., Kreyenhagen	1	4, 22-16	3696	Drilling
Kingsburg	Erickson & Swanson	2	22, 16-22	1500	Idle
Mendota	Jergins Oil Co., Cheney Ranch	1	29, 14-13	9345	Redrilling
	Kern County				
Belridge—South	Delanty & Sutton, Burnoel	1	28, 28-22		Rig
	Santa Mora Oil Co.	1	10, 28-20		Material
	Seaboard Oil Co., Beer	66	17, 26-19		Rig
Devil's Den	Trigg, H. C.	1	11, 25-18	510	Idle
Edison	Goodrum & Vincent, Inc., S.P.	5	31, 29-30	533	Idle
Grapevine	Kern Line Oil Co.	1	19, 11-19		Rigging up
	Richfield Oil Corp., Tejon Ranch	1	2, 10-19	6688	Fishing D. P.
Greeley—South	Superior Oil Co., Brandt	1	28, 29-26	11565	Drilling
McKittrick	Freda Q. Oil Corp., Laymance	4	20, 30-22	1125	Drilling
	Hoyt, Otis, Union	1	6, 30-22	2526	Fishing liner
San Emigdio	Chapman, A. E. T.	1	14, 10-23	1706	Drilling
Semitropic	North Kern Oil Co., Sawyer	1	16, 25-22	6620	Idle
Shale Hills	Gen. Pet. Corp., Twisselman	1	31, 27-19	2003	Drilling
	Scotia Exploration Co., Abott	1	7, 27-19	2047	Idle
	The Texas Co., McD-Theta	1	12, 28-19	4502	Drilling
Wheeler Ridge	Richfield Oil Corp. KCL	2	28, 11-20	4619	Drilling
	Kings County				
Kettleman—South Dome	Bristol Oil Co., Smith	1	35, 24-19	8054	Idle
	Tulare County				
Trico	Tidewater Assoc. Oil Co., Daniels	35	22, 24-23	9666	Drilling

field, Shell is at present running five strings after completing KCL No. A-8-19 for 2102 bbls. of 35 gravity oil and KCL No. A-87-29 for 1978 bbls. of 32 gravity oil. Gas in both instances approximated 1,500,000 cu. ft.

Amerada Continues Coalinga Exploration

With an exploratory hole, S. P. L. No. 38-9, drilling at 8685 ft. near the south line of sec.9,19-16 and with S.P.L. No. 1-17 located near the northwest corner of sec.17,19-16, Amerada Petroleum Corp. continues prospecting north and east of established limits of the Coalinga Northeast field. Discovered by Amerada, the Northeast area has proved to be small in extent as it is controlled on the west by a pinching out of the Gatchell sands and to the east by an established water table. It is possible that No. 38-9 is seeking a separate accumulation in the Eocene sands. The company has sponsored extensive seismograph work in the area and to date no specific word of encountered formations in the outpost well has been released.

At the south edge of the field The Petrol Corp. has located a well on its Schwinn property in sec. 30,19-16, near which Bandini Petroleum Co., Pure Oil Co. and Wilshire Annex Oil Co. recently finished 1000 bbl. wells.

Tide Water Starts Fresno County Test

With foundation poured for Standard Investment No. 1 near the northwest corner of sec.6,19-16, Tide Water Associated Oil Co. is again planning to prospect the area north of the Coalinga Northeast field.

Tide Water has done a considerable amount of geological work in the area, and in 1938 drilled Fleishaker No. 1, near the south quarter corner of sec.1,19-15, bottoming in the Moreno at 7378 ft. No other deep wells have been drilled in the immediate area, and no specific information was ever released concerning this well.

Trico Oil Try Near 9700 ft.

Tide Water Associated Oil Co.'s deep oil test, Daniels No. 35, is reported drilling in hard shale at 9670 ft. after finding the Olcese at 9425 ft. Located in sec. 22,24-23 at the north edge of the Trico gas field, the well is lower structurally than a near by previous deep try, The Caminol Co.'s Amalgamated Oil & Gas No. 1-9, which logged the Vedder contact at 9296 ft. The Vedder at this point showed cuts and evidence of gas but was considered unworthy of tests. The Caminol well, located in sec. 29,24-24, after drilling to 9641 ft., was plugged to 1360 ft. and converted to a water well.

Another deep try which found nothing of significance is Standard Oil Co.'s Morris No. 1, which was drilled to 11,465 ft. near the west quarter corner of sec. 36,24-23.

Continuing its gas development program on lands which are under oil rights agreements to Tide Water, Trico Oil and Gas Co. is drilling Fee No. 1 at 2000 ft. Location is a little less than a half mile northwest of the Daniels oil try.

Texas Co. Plugs Cantua Creek Try

With production gauged at 7 barrels of condensate, 53 barrels of salt water and 340,000 cu. ft. of gas, The Texas Co. killed and plugged S. P. No. 1 to 9356 ft.

Located in sec. 23,17-15 in the Cantua Creek district of Fresno county, the well was drilled to 10,116 ft. where the lower zones were barren. Plugged to 9413 ft., from which point the mentioned wet flow was made, then squeezed in an effort to shut out the salt water, and finally replugged to 9356 ft., the well was last reported making a 5 barrel per hour gross

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flow through a 1/64 in. bean. The fluid, cutting 95.0%, is accompanied by 100,000 cu. ft. of gas.

Northwest of this well, in sec. 26,16-14 Pettijohn Drilling Co. is below 8075 ft. in J. E. Logan, Jr.'s Yearout No. 44. Last reported in hard shale, the well is believed to have entered Eocene Sands at 7790 ft. Since the Eocene, in which it is hoped a stratigraphic trap may be found, is the deepest probable production bet, the story may soon be told on this project.

San Emigdio "Cat" Reports Showings

Arthur E. T. Chapman and Dr. Royal C. French, drilling in sec. 14,10n-23w, claim to have encountered an oil bearing horizon from 1660 ft. to bottom at 1705 ft. Details as to the position of the reported formation in the geologic column were not forthcoming. Dr. French drilled an unsuccessful 570 ft. hole in the same section late last year.

Shallow Coalinga Development Continues

Continuing development of it's Guardian leases in the shallow portion of the Coalinga field, Tide Water Associated Oil Co. is building rig for No. 23 in the southeast quarter of sec.2,20-15.

Also continuing shallow drilling is Section Thirty Oil Co. which spudded No. 8 near the southeast corner of sec. 30,19-15.

Jergins Gets Edison Pumper

Jergins Oil Co. finished McCowan No. A-5, in sec.13,30-29 of the Edison field, pumping 100 bbls. of 22 gravity oil and 280 bbls of water.

Wood-Callahan is rigging up to drill Kranz No. 1 near the east quarter corner of sec. 21,30-29.

South of this area, in the Arvin district of the Mountain View field, Universal Consolidated Oil Co. has finished Cattani No. 3 for 700 bbls. of 29 gravity clean oil through a 30/64 in. bean. This well, in sec.15,31-29, is the most southeasterly of Arvin producers and is the last of a drilling flurry which began in 1939.

Seaboard Enters Devils Den Area

Building Rig to drill No. 66 on the large Beer holdings in the Devils Den area, Seaboard Oil Co. is the latest operator in this potential oil producing district.

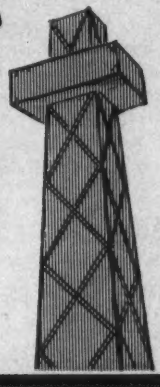
Held under lease by the Amerada Petroleum Corp. the Beer acreage has been repeatedly drilled by other companies under working agreements with Amerada.

The current location, near the center of the southeast quarter of sec.17,26-19, is in an area drilled before to shallow depths by, Amerada, E. J. Miley, Lincoln Drilling, Brown Gold Oil Co. and The Texas Co., only one of which found creditable showings.

Chief reason for a strong belief in the district is the 25 gravity oil pumped from 2670 ft. by Amerada's Beer No. 4. located only 660 ft. from the current Seaboard well, Amerada's producer made a small quantity of the clean oil on pumping operations late in 1937, indicating that this horizon will be commercially productive if a trap can be found.

An initiative petition for an ordinance in Signal Hill which would require a $100 fee for each derrick and a $35 annual derrick fee is being circulated.

HOW TAFT TAMED A TARTAR!



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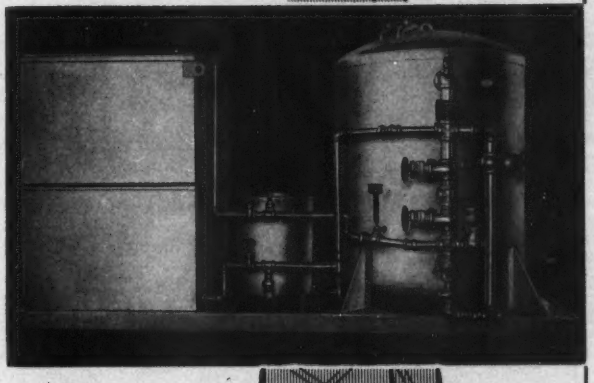
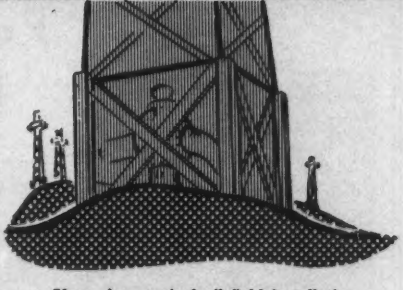


Toughest problem of the driller in California oil fields is hard boiler feed water. Frequent shutdowns for boiler repairs cost hundreds of dollars, waste many hours of valuable time. Taft Well Drilling Company of Bakersfield, whipped the hard water problem with REFINITE WATER SOFTENING EQUIPMENT. Even in the East Coalinga area, where water averages more than 40 grains of hardness per gallon, Taft operates swiftly and profitably on water that is softer than rain. REFINITE equipment uses Natural Mineral Zeolite—with a durability record of more than 20 years. Eliminates the need for boiler compounds, avoids costly shut-downs, minimizes replacements. Patented REFINITE "salt saver" reduces salt costs 35 per cent. REFINITE equipment often pays for itself in a single drilling operation. Investigate today!



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Jergins Re-drills Mendota Wildcat

Jergins Oil Co.'s so called "Mystery Hole," Cheney Ranch No. 1, is redrilling at 6950 ft. ocated in sec. 29,14-13, more than 20 miles northwest of Coalinga, the well was drilled to 9345 ft. and repeatedly tested without success. Most of the testing was conducted just above the 7000 ft. mark where sands most likely to produce were reported.

It is held probable in some circles that the formation may have been mudded off by drilling operations, and by redrilling to fresh sand faces a completion might be obtained. Since a water string is cemented at 6676 ft. and there is 500 ft. of liner now on the racks at the well, it is presumed that the impending test will be of the gas sands previously tried at 7000 ft. and above.

Two Wells Active In Shale Hills

General Petroleum Corp's Twisselman No. 1, drilling in hard shale at 2100 ft. in sec.31,27-19 and The Texas Co.'s McDonald-Theta No. 1, sec.12,28-19, in hard shale and sand at 4500 ft. are the sole activity in the Shale Hills district.

Scotia Exploration Co.'s Abbott No. 1 in sec. 7,27-19 is still idle at 2047 ft.

McKittrick Well Gets Gravel Pack

Otis Hoyt's recent McKittrick completion, Union No. 1, is fishing conventional liner to run pre-gravel-packed liner. Located in sec.6,30-22, the well was completed for 225 bbls. cutting 20% sand from 2526 ft.

Bailing at intervals too frequent for economic operation, Mr. Hoyt is running the gravel pack which has proved effective in controlling similar sand conditions at minimum cost.

In sec.20,30-22, Freda G. Oil Corp. is drilling Laymance No. 4 at 655 ft.

S. Sloan Colt Elected General Electric Director

S. Sloan Colt has been elected a director of the General Electric Co., succeeding Seward Prosser whose resignation was announced following the meeting of the board of directors June 28. Mr. Prosser had been a member of the board of the company since Feb. 12, 1915.

Mr. Colt, president of the Bankers Trust Co., attended Groton School, and was graduated from Yale University in 1914. He is well known in banking circles, having been a vice president of the Farmers Loan and Trust Co., a vice president of the National City Bank and the Bankers Trust Co., and president of the latter organization since 1931. He is a director of various insurance and industrial companies.

Los Angeles Harbor Commission has received a request from the Navy Department that the city cancel an oil lease on a 60-acre tract adjoining Reeves Field, navy air base, in the interest of national defense.

By far the greatest portion of the tracks registered in the United States in 1939 were small, privately-owned vehicles, and the largest single group of truck owners were farmers, an analysis made by the American Petroleum Industries Committee reveals.

A new series of valuable statistical compilations analyzing the consumption of motor fuel in each state has been inaugurated by the U. S. Public Roads Administration.

Representatives of a substantial portion of the nation's oil industry appeared befor the House Ways and Means Cimmittee on June 4 and expressed the industry's willingness to accept increased taxes on petroleum to finance national defense.

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LAUGH THIS OFF

A meeting of the local section of the Society of Indigent Petrologists was in session, and the chairman had just introduced the speaker of the evening. The latter, anxious that nobody should miss his words of wisdom, cupped both hands and yelled through them, "Can you hear me distinctly, you folks at the back?" The yells of "No" from the rear had scarcely died away when someone in front muttered enviously, "The lucky stiffs!"

After the speaker had been hammering away at nothing for about twenty minutes, an impatient listener turned to his buddy and whispered, "Don't you wish he'd get to the point?" "Yeah," was the answer, "To the point of exhaustion."

And public speaking has been defined as the art of diluting a two minute idea with a two hour vocabulary.

Here, **Brice Gillespie** interrupts to wish that the industry's crooked hole experts would do something about the 14th hole at the Western Avenue golf course.

Brice, you know, has perfected a device with which you can actually distinguish between a dust storm and a C.N.G.A. golf tournament.

Speaking of the C.N.G.A. golf tournament, **Cy Fluor** tells us that he and **Earle Gard** had a ding dong battle right up to the seventeenth hole and then Earle busted through with a nine on him.

And **Harry Fiske** never smokes between meals. He eats between smokes.

On the same topic, **Ike Burroughs** describes his chewing plug as "smokeless tobacco."

You have heard, of course, about the equipment salesman who was asphyxiated smoking one of his own gift cigars in a telephone booth.

Which recalls the fact that a Santa Fe Springs rousty was recently canned for smoking in a forbidden zone. Showing that where there is smoke there is usually fire.

Jim Craig, the bridge expert, now informs us of a rapidly growing suspicion that Venus lost both her hands by overbidding.

And we have lately been suffering from a disease called "bridge shin." It is caused by forgetting what are trumps.

The son of an oil man who shall be nameless was subjecting his pop to the daily quiz. "What becomes of an automobile when it is too old to run " he asked, at which stage mom butted in to explain, "Somebody usually sells it to your father, dear, as a used car—almost new."

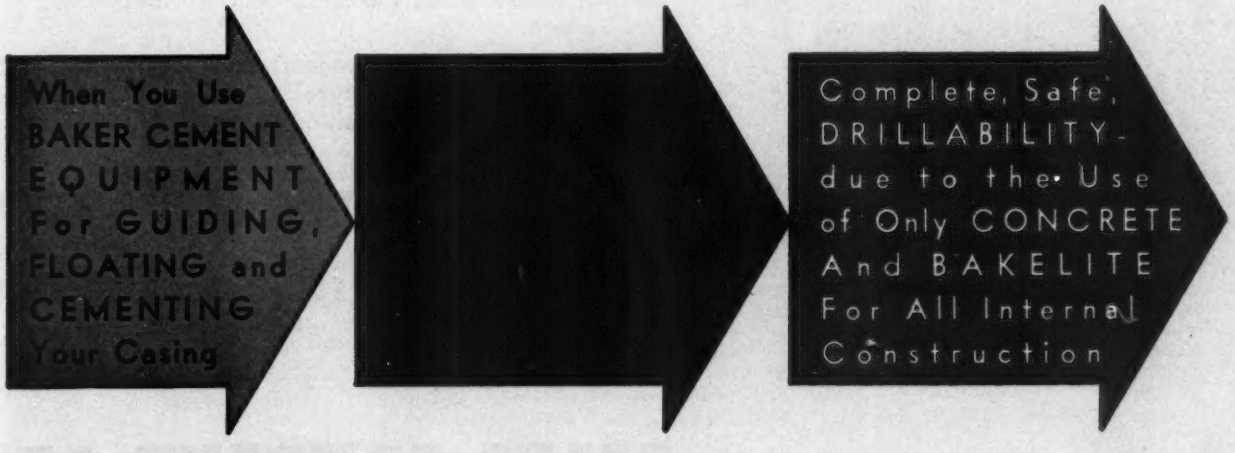
And says **Frank Muzio,** "How did you like the show last night?" Replies **Joe Dearborn,** "Well—if it had rained, I would have been soaked twice."

Whereupon **Tom Taggart** declares that the last time he was in the old country he tried an American story on a London cabby, as they were driving along. The cabby never gave a snicker but one of the horses tumbled.

Tom also tells us much to our astonishment that Ireland is the greatest copper producing country in he world. He claims that practically every copper in New York was imported from the Ould Sod.

We have never been much of a politician, but we have often wondered if a congressman isn't just a guy who was sent to the grocery store when he was a small boy and forgot what he was sent for.

In conclusion it is a great privilege to be living out here in California with the blue sky overhead, but remember that isn't the only overhead you have to worry about.



Even ALADDIN COULDN'T ASK FOR EASIER OPERATION

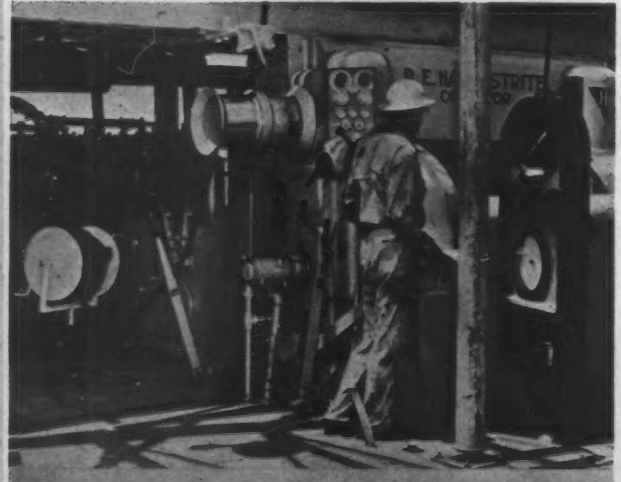


Illustration above shows Instrument Panel, Finger-tip Control For Air-Operated Drum Clutches, Speed Selector Handle for Automatic Transmission Shift, Water-Cooled Drum Friction Clutches and Brakes, Friction Latch on Hand Brake Lever, and Clutch Pedal. These all contribute to the EASIEST OPERATION of WILSON Drilling Rigs.

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Havenstrite Wildcat Tops Pico Formation

R. E. Havenstrite's interesting test of the Del Valle Anticline in sec. 16,4-17 near Castaic is reported to be drilling in Pico shale and sand at 3220 ft. after noting the Saugus-Pico transition at approximately 2100 ft. Some of the sand streaks have showed traces of oil but production is not looked for above the Modello zones which are productive at Newhall-Potrero.

Wood-Mellon Plans Production Trial

With the hole bottomed at 6425 ft. and a drill pipe fish sidetracked to 6200 ft., Wood-Mellon Oil Co. is planning to make a production test in Wood No. 1, its wildcat at the northeast corner of Figueroa St. and Victoria Ave. An electric log was made of the redrilled hole and wall samples are being taken in possible oil zones at 3100 ft. and 5100 ft. If analysis of these samples warrants it, casing will be run and completion attempted. Should the upper zones fail, the hole will be carried down to test the Miocene sands.

British American Tests Edwina No. 1 at Newhall

British American Oil Producing Co. is attempting to bring in its Newhall exploratory well, Edwina No. 1 in sec. 11, 3-16 after twisting off drill pipe on bottom at 6196 ft. and plugging to 5834 ft. A 1229 ft. liner including 77 ft. perforated was landed on the plug and cemented through perforations at 5757 ft. but a test of this lower interval was inconclusive when the liner collapsed near the splice. During swabbing some gas was in evidence but mechanical difficulties prevented a thorough test. The liner was then perforated at 5760 ft. and another trial is being made before plugging to perforate the interval 5430-5515 ft. where an almost solid oil sand body was cored.

More Wells Deepened At West Montebello

The West Montebello field continues to be relatively active due to the deepening of wells to the Eight-Three zone. Largest of the recent re-completions was J. E. Mabee's Mulholland No. 6 which took in an additional 132 ft. to 7802 ft. coming in for an initial 600 bbl. rate with only 325,000 cu. ft. of gas.

Smaller rates of production were registered by Wood-Callahan's Todd No. 2, Stanley Oil's No. 1 and R. R. Bush's Zanetti No. 2. The latter well, located in the westerly section, deepened from 7676 ft. to 7776 ft. but was plugged to 7710 ft.

On The Texas Co. Mulholland lease, York Oil Co. carried No. 6 to 7805 ft. and recompleted with a heavy water cut. The flow has been killed to locate the trouble

Union Oil Redrills Sansinena Wildcat

After plugging bottom from 5157 ft. to 2000 ft., Union Oil Co. is redrilling Sansinena No. 12 at 4225 ft. The test hole is located on a large property held by Union two miles southeast of the old Whittier field.

Security Land and Water Co. is drilling Security No. 1, sec. 9,3-10, at about 2000 ft.

Continental To Drill 2nd Reservoir Well

Continental Oil Co. is preparing to drill Howell No. 2, its second effort to find production on Reservoir Anticline at the west end of the San Fernando Valley. The new well is located approximately 3000 ft. northwest of Howell No. 1 which early this year was carried to 4255 ft. and abandoned when the drill passed from lower Pliocene into Eocene at 4000 ft. Presumably the present try seeks a stratigraphically trapped accumulation where the Miocene pinches out.

Master Completes East Coyote Pumper

Bottoming Mathis No. 1 at 4253 ft. and gun-perforating the blank liner below 5214 ft., Master Petroleum Co. obtained another good pumping well in the new central hot spot at East Coyote. Estimates place the yield at 420 bbls. a day.

Master's next completion in the area will be Lemke No. 3 which has been redrilled and deepened to 4260 ft. and is now standing with casing cemented on bottom preparatory to gun-perforating in the oil horizon. Lemke No. 2 is being rigged up.

Bryan-Pacific Oil Co. is reported to have picked up the top of the sand near the 4225 ft. level in its first well on the Wallop lease formerly held by General Petroleum Corp.

Not too encouraging were the results

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Athens	Melrose Pet. Co.	1	12, 3-14		Rig
Castaic	Colter, R. T., Explor.	1	8, 4-17	1338	Idle
	Havenstrite, R. E., Lincoln	1	16, 4-17	3106	Drilling
Domingues, West	Wood-Mellon Oil Co., Wood	1	31, 3-13	6425	Reaming
Inglewood	Vanguard Oil Co., L.A.I.	1	29, 2-14	1041	Idle
La Habra	Security Land & Water Co.	1	9, 3-10	2050	Drilling
	Union Oil Co., Sansinena	12	31, 3-10	5157	Redrilling 4225
Mint Canyon	Redwood Oil Co., Mitchell	2	22, 4-15	880	Idle
Newhall	British-American Oil Prod. Co., Edwina	1	14, 3-16	6196	Testing
	Canyon Oil Co., Sanborn	1	6, 3-16		Rig
	Consolidated Pet. Co., Needham	4	13, 3-16	4398	Idle
	Creighton Hammon Synd., C.H.	1	17, 3-16	800	Drilling
Palos Verdes	Rolling Hills Pet.	1	27, 4-14	6580	Rolling casing
San Fernando	Casa Grande Oil Co., Lopez-Lundy	1	1, 2-15	3785	Testing
	Continental Oil Co., Howell	2	35, 3-16		Rig
	Parry, Geo. G., Moynier-Parry	1	6, 2-14	4121	Drilling
West Whittier	Cal. Pico Oil Co., Beach	1	7, 2-11	1630	Drilling
	Orange County				
Anaheim	Morton, Lindley C., Thomas	1	23, 4-10	3828	Drilling
Buena Park	Tucker, H. M., Heath	1	34, 3-11	8935	Abandoned
Costa Mesa	Thompson, Milton N., Banning	1	9, 6-10	5625	Idle
Garden Grove	Bird & Chambers	1	31, 4-10	1250	Idle

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Merced	Don Pedro Oil Co.	1	9, 6s-9e	375	Drilling
Monterey	Loma Grande Oil Co., Corey	1	23, 24s-10e	1000	Drilling
	Priest Valley Pet. Co., Greve	1	22, 20s-12e	2800	Idle
Sacramento	Bishop Oil Co., Willmar	1	21, 4n-3e	3265	Drilling
	Standard Oil Co., Rio Vista State	1	31, 4n-3e		Rig
San Mateo	Ra-Lite Petroleum, Inc., Bell	5	16, 7s-4w		Rigging up
	Wilshire Oil Co., Cowell	3	17, 6s-5w	1400	Drilling

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obtained by Hathaway Co. and Fred Garleipp. The former company after cementing casing on bottom at 4285 ft., perforated at 4260 ft. and pumped about 45 bbls. a day cutting 20% while Garleipp's Juanita Yorba No. 3 is pumping a like amount from the upper zone at 3350 ft.

On the north side of the field, O. M. Slosson plugged the former Sonwell Oil Co. Coyote No. 2 from 3307 ft. to 3241 ft. reducing the water lift considerably.

Gibraltar Continues Dominguez Edge Tests

Still attempting to develop production at the southwest end of Dominguez, Gibraltar Drilling Corp. is continuing to test the Eighth Callender zone in Dasteel No. 1 at the corner of Victoria Ave. and Avalon Blvd. Bottom has been plugged from 8209 ft. to 8114 ft. where swabbing recovers a little oil and gas but as yet in non-commercial quantities. Though there is still a slight hope, evidence points to the well being too low structurally to make a producer.

Shell Oil Co.'s slim-hole job, Reyes No. 105 which set 5½ in. casing at 4160 ft. and completed at 4290 ft., is now on the beam at a 222 bbl. daily rate. Reyes No. 106 is drilling below 5500 ft.

Union Oil Co. is preparing to test for production in Austin No. 3, which offset the Larronde lease, after setting a combination liner on bottom at 7540 ft. No. 4 on the Austin property is rigging up.

On the east side of Avalon, Union is preparing to complete Callender No. 77 and Carson No. 14.

Huntington Beach Activities Reported

Activity at Huntington Beach, though light, is scattered widely throughout the field. In the easterly section of the old field, The Petroleum Co. is completing Wilson No. 6 after plugging bottom from 3357 to 3315 ft. and setting a water string at 2720 ft. Huntington Signal Oil Co. Genor No. 1, with bottom at 3650 ft., cemented casing at 3615 ft. and is preparing to test.

In the Ocean Front area, Bolsa Chica Oil Co. is redrilling an old well at 4400 ft. while Surf Associates, Inc. is preparing to complete its first State tideland well. The Termo Co. will soon finish its State No. 409-4 which is bottomed under the tidelands.

Pacific American Oil Co. is spudding its well No. 7 in the westerly section of the old field and Standard Oil Co. is drilling Bolsa No. 42 below 3600 ft. Bolsa Chica Gun Club is scheduled for an early test by Signal Oil Co.

Casa Grande Tests San Fernando Well

Casa Grande Oil Co. is making a test of showings cored in its 3785 ft. wildcat in Lopez Canyon in sec. 1,2n-15w near San Fernando. Casing "froze" at 3110 ft. and the well is being tested below that point.

In the adjoining section to the east, Geo. Parry is drilling below 4100 ft. in brown shale. A conglomerate formation at 3525 ft. was erroneously reported to be granite.

Turf Oil Plugs Race Track Well

Not satisfied with the 30 bbl. production of 50 gravity oil from 8390 ft. Miocene zone, Turf Oil Co. plugged No. 1 on the Hollywood Park grounds to 4750 ft. where an attempt is being made to develop a higher yield. Accompanying the oil from the deep zone was approximately 400,000 cu. ft. of gas. Total depth of the well is 8446 ft.

Basin Oil Co. is drilling Potrero No. C-9 below 2200 ft. on the Golf course.

Tucker Abandons Buena Park Well

The third wildcat well in two years on the flat land lying west of Buena Park went by the boards the other day when Harrison M. Tucker, Los Angeles insurance broker abandoned Heath No. 1 at 8935 ft. The project, located north of Orangethorpe Road in sec. 34,3-11, encountered the top of the Repetto at approximately 8700 ft. This formation was placed at 7500 ft. in the McKeon-Carmenita No. 1 a mile and a half to the northwest, but was not found in the shallower D.H.B. well half a mile southwest.

Long Beach Activity Maintains Steady Pace

Like Old Man River, the Long Beach-Signal Hill field just keeps rolling along with an even development rate. Apex Petroleum Co. is spudding in Morris No. 16 at the northeast corner of Willow and Orange, Axis Petroleum Co. is below 3330 ft. in Wood No. 2, Safeway Oil Co. is building derrick for No. 4 north of the cemetery area and M.B.C. Oil Co. is preparing to complete Woolner Fee No. 2 on Pepper Drive. R. W. Jerman is testing Knight No. 4 in the Wilbur zone and is fighting hard luck in Dormax No. 2 where a drill pipe fish is standing cemented in place to sidetrack.

On the crest of the Hill, Sol C. Bush's Exchange No. 3 was put on the pump from the interval 2450-2900 ft. but sanded up almost immediately. Oceanic Oil

Co., one of the oldest independents in the field, is deepening well No. 4 below 4750 ft. A. D. Mitchell is preparing to redrill Mun No. 1.

St. Anthony Completes Big Rosecrans Well

St. Anthony Oil Corp. brought in its second big producer in the Compton Blvd. and Main St. section of the south Rosecrans extension. Known as Gorc on No. 2, the hole was finished at 7854 ft. with 300 ft. of zone open below the shoe of the water string. Following its no information policy established when No. 3 was completed as a big well, the company has not revealed any gauges on its latest effort but close observers estimate its potential in excess of 2500 bbls, a day.

Across Main St. to the east, Southern California Petroleum Corp. brought in Rowena No. 2 at 1650 bbls. a day from 7775 ft. Southern California is drilling Van Nuys No. 1 to the north and is preparing to drill Maxwell No. 1.

In the easterly portion of the extension, Chicago Oil Co. with bottom plugged to 7340 ft., swabbed the fluid which was nearly all oil to 6000 ft. and is reperforating below 7100 ft. Mission Oil Co. is testing Pierce No. 1, bottomed at 8546 ft., but seems not yet to have obtained an effective water shut-off.

Crest Petroleum Co. unsuccessfully attempted to test Zinns zone showings at 6281 ft. and is deepening below 6700 ft. The well is located south of Redondo Blvd. and west of San Pedro St.

At the north tip of the Athens area, Thorley Oil Co. stopped drilling at 7883 ft. to set casing at 7835 ft. above a body of hard, tight sand which has a strong kerosene odor and gives light cuts.

Tide Water Finishes Aliso Canyon Producer

Another good well was Tide Water Associated Oil Co.'s Porter No. 15, recently placed on production at Aliso Canyon. With bottom at 5500 ft. and casing cemented at 4970 ft., a perforated liner was run and the well brought in flowing 987 bbls. in its first 16 hours through an open line. A 1 in. bean was installed and the well allowed to flow for another eight hours, producing an additional 292 bbls. before being shut in. Tests indicated the oil to be of 23.3 gravity and to contain less than three per cent water.

Next producer for the field will be T.W.A.'s Porter No. 22 which is coring in the oil zone after setting 8⅝ in. casing at 4825 ft. Porter Nos. 16 and 17 have derricks up ready for drilling equipment while No. 14 is coring at 4000 ft.

Inglewood Boom Now Dead Horse

The much hoped-for Inglewood boom is now very much of a dead horse with R. R. Bush Oil Co. hanging Sentous No. 1 on the hook at 7345 ft. Neither the Bush well on the west flank nor the Federal Oil Co. try at the north end of the field found producible oil sands or even encountered the top of the Miocene which was supposed to have been found in Rubel No. 17 at 5050 ft. and in the Plymouth well at 5570 ft. Depth of the idle Federal well is 6700 ft. If the Miocene was properly identified in the old wells, ideas of Inglewood structure must be drastically revised.

Superior Abandons Wilmington Wildcat

Finding all formations barren to 6200 ft., Superior Oil Co. abandoned its "B" No. 1 in the Mormon Island section of Wilmington harbor. No formation data was released by the company but rumor has it that the sand zones productive in the field to the north and east were all present but too low structurally to contain oil.

The Wilmington field proper continues to be the most active in the state with completions running from 150 bbls. a day in the Ranger zone to 8000 bbls. in the more prolific Terminal zones.

Despite its tremendous potential, the daily production of the field averages 85,000 bbls., exceeding the Umpire's allowable by 6000 bbls.

Doodle-Bug Operators Still Find Customers

Believe it or not, divining rod oil locaters still find a following among oil investors in California.

Universally frowned on by conventionally minded geologists, the desert regions of Southern California still are the happy hunting grounds of the pseudo-scientific oil prospectors. Commonly referred to as "doodle-buggers," these gentry are so sincere in their belief in their "instruments," the contents and workings of which are generally secret, that they impart the faith to others who pool their resources to do the drilling.

The instruments vary in all respects as widely as do their owners. Some are highly complicated propositions apparently built from parts salvaged from old radios, x-ray machines and other appliances established in the popular mind as "scientific," while the old standbys, bottles of secret fluids, swaying plumb bobs and, of course, the forked willow stick have a large and loyal following. Not all of the cryptomancers of the oil in-

(Continued on Page 31)

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Coastal District

Santa Barbara Wildcat Interest Shows Increase

Interest in Santa Barbara county wildcatting has picked up considerably as evidenced by the number of projects recently started.

Believed to be at a critical stage is Union Oil Co.'s Pezzoni No. 2 in sec. 33,10-35 near Betteravia which is now below 2620 ft. The company closely guards all formation data on this hole as it did on No. 1, located about 600 ft. to the south. The first try is known to be bottomed in Franciscan schist at 2242 ft. but it is only rumor that faults were encountered and that the drill passed from Sisquoc into the basement without finding the Monterey. No. 2 apparently is attempting to find the Monterey near the point where it is overlapped by Sisquoc against the Franciscan.

The Texas Co. is ready to spud Bishop No. 1 which will be a test for a new field north and east of prolific Elwood. The derrick is located north and east of the intersection of Glenn Annie Road and State Highway No. 101. The geologic section here is considered the same as in the neighboring field and includes possibilities in all formations through the Eocene.

On the large Hollister ranch west of Gaviota station on the Southern Pacific Railroad, Republic Petroleum Co. was last reported drilling at 2400 ft. in Rincon shale which immediately overlies the Vaqueros where production is considered possible. On another structure farther west, several companies in the past encountered high pressure gas but no oil in the Vaqueros. Should this formation be found barren, it is probable that the hole will be carried down to explore the Sespe.

After several weeks of grading and road building, Tide Water Associated Oil Co. is preparing to build derrick for Souza No. 1, the company's second try for production in the Santa Rita Hills. Three years ago, Tide Water Associated drilled Leonis No. 1 to 4950 ft. in the same area.

At Summerland, Barnato Corp is drilling the Oil Group, Inc. Hyland No. 1 at 3220 ft.

Superior's Huasna Well Finds the Going Tough

Like all previous Huasna Valley wells, Superior Oil Co.'s Tar Springs Ranch No. 1 is finding the going rather tough. Spudded May 15th, only 3500 ft. of hole has been made so far which is something of a record for this company which in the San Joaquin Valley drills this depth in about four days. No casing has been set.

Santa Maria Valley Revival Under Way

A revival in Santa Maria Valley drilling activity is getting under way with one well now drilling, derrick up for another and locations surveyed for two more. In addition half a dozen companies have tentative plans for new wells to be started in the next few weeks.

Now under way is The Petrol Corp.'s first Santa Maria Valley well which is below 1500 ft. on the grounds of the Lakeview School at the west quarter corner of sec. 27,10-34. Union Oil Co. has surveyed a location for Mallory No. 3 which will offset Petrol to the north.

Somewhat in the exploratory category is Union's Bradley Lands Two No. 1 which will be drilled 990 ft. south and 990 ft. west of the northeast corner of sec. 36,10-34, about half way between production on the Hancock-Bush Wylie lease and the old System Oil Co. well which was drilled to 5265 ft. in 1929.

In the extreme westerly section of the field, Union has derrick up for Le Roy No. 5.

The completion and successful operation of independent refineries in the Santa Maria area is providing stimulus for the renewal of drilling according to local observers.

Deepened Ojai Well Flows Through Casing

Demonstrating the benefits of using oil as circulating fluid when drilling through low pressure oil sands, Van Acker & Havelin's Coronet No. 1 in the old East Ojai field is flowing through the 6⅝ in casing at an estimated 65 bbls. a day rate. Recently taken over by the new operators, the hole was deepened using rotary equipment and circulating heavy oil. Originally bottomed at 2298 ft. where casing including 288 ft. perforated was landed and cemented through perforations at 2008 ft. the well was not a commercial producer due to the mudding off of the old sands. While deepening, the well attempted to flow on several occasions and drilling was stopped at 2697 ft. because of increasing difficulty in preventing large flows while pulling drill pipe. While coming out of the hole after landing an all-perforated liner on the new bottom, the well started to flow naturally through the casing, the heavy circulated oil soon being replaced with the lighter formation oil which is close to 30 gravity and is apparently clean. According to Robert Van Acker, tubing will be run and the well completed in the conventional manner.

C.C.M.O. Completes Two Wells at Rincon

C. C. M. O. Co. completed two good flowing wells in the easterly extension of the Rincon field. Hobson No. B-34 perforated 7 in. casing at intervals from 4144 to 4385 ft. and completed flowing over 600 bbls. a day of 29.6 gravity oil cutting 3.8% through a half inch orifice. Hobson No. B135, with perforations

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
Santa Barbara County					
Betteravia	Union Oil Co., Pezzoni	2	33, 10-35	3050	Drilling
Elwood	The Texas Co., Bishop	1	13, 4-29		Rigging up
Gaviota	Republic Pet. Co., Hollister	1	36, 5-33	2344	Drilling
Santa Rita Hills	Tidewater Assoc. Oil Co., Souza	1	12, 6-33		Foundation
Summerland	Barnato Group, The, Hyland	1	16, 4-26	3211	Drilling
San Luis Obispo County					
Arroyo Grande	California Fuel Oil Co., Elberta	3	5, 32-13	3275	Drilling
Elkhorn	Calif. Pet. Prod., Irons	1	19, 10-24	2527	Pumping water
Huasna	Superior Oil Co., Tar Springs	1	24, 32-14	3490	Drilling
Ventura County					
Conejo	Sulphur Springs Oil Co., Janss	1	33, 2-19	4430	Drilling
Ojai	Van Acker & Havelin, Coronet	1	17, 4-21	2697	Flowing thru casing
Piru	Bolsa Chica Oil Corp., Snow	6	4, 4-18		Grade
Santa Paula	Per-Col Oil Co., Anlauf	6	21, 4-21	1445	Prep. to deepen
Santa Susana	K. C. Oil Co., Marr	1	32, 3-17	1716	Idle
Sespe	English, L. A., Lankershim	3	13, 4-9	1476	Drilling
	G. E. Development Co.	7	13, 4-19	920	Cleaning out
	Gerard, Chas. F., Burson	1	18, 4-19	375	Drilling
	Merchants Pet. Co., Cochrane	8	1, 4-20	2425	Drilling
	Rio Hondo Oil Co., Cosby	1	14, 4-19	1650	Drilling

open between 4428 and 5135 ft., came in for 361 bbls. of 29.0 gravity oil with a 3.7% cut.

Next completion for the company will be No. B-32, now below 4400 ft. after topping the first oil sand at 3550 ft.

California Alliance Quits Ventura Avenue Outpost

Finding nothing in the way of commercially productive sands, California Alliance Petroleum Corp. abandoned Schmidt No. 1, its important northerly outpost in the Avenue section of the Ventura Avenue field. Formation at bottom, 9569 ft., was given as shale with streaks of gray sand.

In the same north-central section of the field, British American Oil Producing Co. is drilling Barnard No. 1 at 9330 ft. and Hartman No. 10 at 8400 ft.

Lloyd Corp., operating in the northeasterly section, is below 8450 ft. in well No. 5 and is rigging up to drill No. 6. Roads are being graded to the site of No. 7.

Maintaining its record for large completions on the Taylor lease, Shell Oil Co., Inc., finished No. 120 at 7600 ft. with a potential of 3600 bbls. of oil and 2,650,000 cu. ft. of gas. Shell is drilling three wells on this property and is preparing to drill a fourth.

Tide Water Associated Oil Co. brought in Hartman No. 22 flowing 400 bbls. from a total depth of 9130 ft.

(Continued from Page 29)

dustry depend on material assistance in divining the presence of petroleum. Many are they who profess to an itching of the feet, a feeling of faintness or some other physical evidence when over or near a subterranean oil "pool." What's more, they really believe it.

Instrument men seldom get along among themselves as each thinks the others a pack of deluded fools. He knows they are mistaken because he knows he has the only sure-fire method.

A universal characteristic of doodlebuggers is the exactitude with which they describe the limits and details of potential oil strikes. They seldom equivocate, a sharp contrast to the legitimate geologist who admits he cannot see underground and must weigh the scant evidences he can find, then guess at the probable sub-surface conditions. The doodle-bugger usually tells his constituents the exact depths at which oil will be found as well as the type and gravity; the geologist almost never, except in the most general terms.

So convincing is the real sincerity of the divining rod operator that he often obtains the highest type of business and professional men as backers. In fact, at the present time very few wildcat wells located by this method are financed by public stock sale, the largest portion being the pooled interests of a small group of individuals all of whom are personal followers of the messiah.

Regions which to the petroleum geologist are impossible for the formation and accumulation of oil do not dismay the doodle-bugger, who has been known to drill for years in granite without losing faith.

An examination of the results of witchstick drilling shows that two extensions of old fields may partially be accredited to this method but never, in California, a new field. In the case of one of the extensions there is evidence that the instrument was a stage "prop" to close some wavering backers. In any event, the report accepted by the State Corporation Commissioner was written by a widely known and respected petroleum engineer. The other extension was dis-

(Continued on Page 36)

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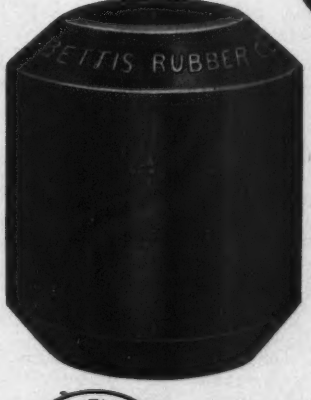

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Production « « » » Development

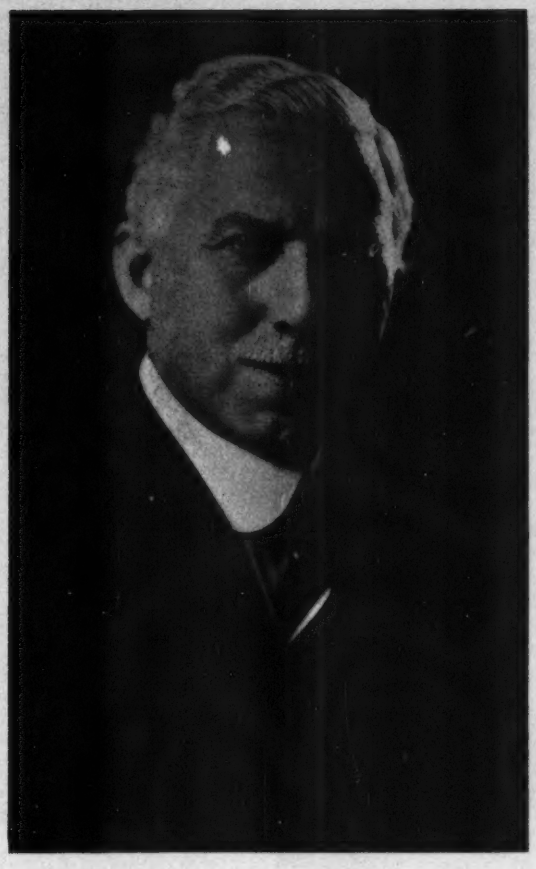
(Figures of Production and Stocks are in barrels of 42 Gals.)

	Total Production May	—DAILY AVERAGE— May, 1940	April, 1940	May, 1939
Group No. 1				
Arvin	62,438	2,014	1,995	673
Belridge—North	330,578	10,664	10,926	11,711
Belridge—South	65,343	2,108	2,010	1,115
Canal	179,115	5,778	5,895	4,619
Canfield Ranch	1,237	40	56	19
Coalinga	824,617	26,600	25,552	11,936
Cole's Levee	119,494	3,854	3,608	406
Edison	72,303	2,332	2,287	2,389
Elk Hills	386,384	12,464	12,420	9,862
Fruitvale	174,238	5,620	5,877	6,549
Greeley	115,781	3,735	3,577	1,974
Kern River	370,820	11,961	11,744	10,530
Kettleman Middle Dome	.....	.....	.....	31
Kettleman North Dome	1,454,411	46,916	47,086	53,140
Lost Hills	127,458	4,112	4,203	3,123
McKittrick	109,916	3,545	3,569	3,658
Midway-Sunset	1,633,057	52,679	51,683	53,121
Mountain View	205,425	6,626	7,291	8,161
Mount Poso	312,880	10,092	9,758	12,287
Paloma	5,241	174	186	.....
Rio Bravo	248,335	8,010	8,542	7,705
Round Mountain	221,843	7,156	7,287	10,640
Strand	50,585	1,631	1,397	.....
Ten Section	277,311	8,946	8,889	8,928
Tupman	50,346	1,631	1,639	501
Wasco	49,198	1,587	1,466	1,224
Wheeler Ridge	9,651	311	315	328
Group No. 2				
Capitan	56,236	1,814	1,865	2,426
Elwood	112,016	3,613	3,727	4,258
Rincon	122,912	3,964	4,059	3,520
San Miguelito	97,314	3,139	3,179	2,525
Santa Barbara	6,859	221	246	300
Santa Maria	171,639	5,536	3,886	5,120
Santa Maria Valley	529,393	17,077	18,359	10,996
Summerland	671	21	24	42
Ventura Avenue	1,050,400	33,886	32,643	35,116
Ventura-Newhall	229,186	7,393	7,206	5,757
Watsonville	775	27	25	30
Group No. 3				
Brea-Olinda	175,341	5,657	5,842	5,465
Coyote—East	125,197	4,039	3,950	2,232
Coyote—West	195,911	6,320	6,217	7,511
Domingues	658,544	21,244	20,502	21,457
El Segundo	71,616	2,310	2,410	3,293
Huntington Beach	782,750	25,250	27,007	29,739
Inglewood	379,382	12,238	12,440	11,791
Lawndale	1,420	46	40	61
Long Beach	1,352,771	43,636	44,856	48,311
Los Angeles-Salt Lake	17,193	555	523	506
Montebello	673,637	21,730	20,725	17,497
Playa Del Rey	132,127	4,262	4,381	4,939
Potrero	52,512	1,694	1,883	1,063
Richfield	288,486	9,306	9,331	8,604
Rosecrans	312,299	10,074	9,461	12,817
Santa Fe Springs	805,812	25,994	26,013	27,425
Seal Beach	219,957	7,095	7,214	7,338
Torrance	348,506	11,242	11,645	19,618
Whittier	19,916	642	970	1,016
Wilmington	2,570,292	82,913	83,561	80,886
Total	10,019,257	613,524	613,448	615,280
April	18,403,433	613,448		
Increase	615,824	76		

	New Rigs Up	Active Drilling	Producers Completed	Daily Initial Output	Active Producing	Abandoned Wells Drillers	Abandoned Wells Producers
Group No. 1							
Arvin	1	1	....	....	15	....	....
Belridge—North	1	4	....	....	79	....	....
Belridge—South	..	....	....	....	157	....	....
Canal	1	1	....	....	33	....	....
Canfield Ranch	..	....	....	....	1	....	....
Coalinga	6	21	12	26,336	883	....	1
Cole's Levee	2	4	1	648	21	....	....
Edison	3	1	2	188	95	....	....
Elk Hills	..	....	....	....	194	....	....
Fruitvale	..	1	....	....	169	....	1
Greeley	2	5	3	5,644	31	....	....
Kern River	5	2	9	815	1,558	....	4
Kettleman Middle Dome	..	....	....	....	....	....	....
Kettleman North Dome	1	8	7	7,106	261	....	....
Lost Hills	..	....	....	....	357	....	....
McKittrick	2	3	2	405	205	....	....
Midway-Sunset	4	5	....	....	2,615	....	3
Mountain View	..	....	....	....	186	....	....
Mount Poso	..	2	1	60	288	1	2
Paloma	..	2	....	....	1	....	....
Rio Bravo	5	6	3	5,346	50	....	....
Round Mountain	..	1	....	....	219	....	....
Strand	..	....	1	2,560	9	....	....
Ten Section	5	3	5	11,814	50	....	....
Tupman	4	14	1	1,200	9	....	....
Wasco	1	2	....	....	10	....	....
Wheeler Ridge	..	1	....	....	34	....	....
Group No. 2							
Capitan	..	....	....	....	43	....	....
Elwood	..	....	....	....	74	....	....
Rincon	2	2	....	....	62	....	....
San Miguelito	1	....	1	2,090	20	....	....
Santa Barbara	..	....	....	....	21	....	1
Santa Maria	1	2	....	....	166	....	....
Santa Maria Valley	1	1	....	....	142	....	....
Summerland	..	1	....	....	8	....	....
Ventura Avenue	3	13	2	6,321	313	....	....
Ventura-Newhall	6	13	4	2,108	570	....	....
Watsonville	..	....	....	....	7	....	....
Group No. 3							
Brea-Olinda	..	....	....	....	352	....	....
Coyote—East	2	1	1	140	80	....	....
Coyote—West	1	1	1	600	61	....	....
Domingues	2	5	2	2,045	189	....	....
El Segundo	..	....	....	....	45	....	....
Huntington Beach	3	3	1	763	526	1	....
Inglewood	1	2	....	....	215	....	....
Lawndale	..	....	....	....	5	....	....
Long Beach	3	3	4	409	1,215	....	2
Los Angeles-Salt Lake	..	....	....	....	103	....	....
Montebello	1	4	4	1,527	350	....	1
Palay del Rey	..	....	....	....	158	....	....
Potrero	..	1	....	....	18	....	....
Ridhfield	1	1	....	....	304	....	....
Rosecrans	6	7	6	3,228	155	....	....
Santa Fe Springs	..	....	....	....	577	....	....
Seal Beach	..	....	1	950	119	....	....
Torrance	..	....	1	35	691	....	2
Whittier	1	2	....	....	142	....	....
Wilmington	23	17	12	8,972	324	....	2
Miscellaneous Drilling	11	24	....	....	....	12	....
Group No. 4—Gas Fields							
Buena Vista Lake	..	....	....	....	1	....	....
Buttonwillow	..	....	....	....	5	1	....
Chowchilla	..	....	....	....	....	....	....
Delano	2	....	1	Gas	13	....	....
Dudley Ridge	..	....	....	....	....	....	2
Fairfield Knolls	..	....	....	....	....	....	....
Goleta	..	....	....	....	....	....	....
Marysville Buttes	..	....	....	....	3	....	....
McDonald Island	..	....	....	....	5	....	....
Rio Vista	1	....	2	Gas	25	....	....
Semi-Tropic	..	....	....	....	....	....	....
Tracy	..	....	....	....	4	....	....
May	115	190	90	90,680	15,141	15	21
April	84	183	80	61,349	15,096	19	40
Increase (*Decrease)	31	7	10	29,331	43	4*	19*

SUMMARY OF CALIFORNIA OILFIELD OPERATIONS FOR MAY, 1940—STOCKS HELD IN PACIFIC COST TERRITORY BY CALIFORNIA OIL COMPANIES

	May 31, 1940	April 30, 1940	May Changes	May 31, 1939
1. Gasoline-Bearing Crude	35,721,588	35,835,610	−114,022	39,830,694
2. Non-Gasoline-Bearing Crude	13,279,151	13,520,733	−241,582	14,442,707
3. Unblended Nat. Gas	2,210,560	2,020,627	+189,933	2,423,266
4. Gasoline (not including distributing and service stations)	17,278,777	17,645,918	−367,141	15,044,669
5. Naphtha Distillates	1,709,868[1]	1,585,311[1]	+124,557	1,339,712[1]
6. Gas Oil and Diesel Oil	9,810,933	9,679,406	+131,527	10,244,405
7. Fuel Oil Residuum	65,101,337	65,346,750	−245,413	71,091,951
8. All Other Stocks	8,713,600[2]	8,494,606[2]	+218,994	6,933,820[2]
TOTAL	153,825,814	154,128,961	−303,147	161,351,224
[1]Estimated amount of unfinished gasoline contained in item 5	1,484,386	1,414,293		1,150,101
[2]Coke included in item 8	1,252,885	1,200,358		253,939



H. D. Collier

H. D. Collier Elected President of Standard Oil Co. of California

At a regular meeting July 8 the board of directors of the Standard Oil Company of California elected H. D. Collier, to be president of the company, succeeding W. H. Berg, whose death occurred on June 26.

H. D. Collier, the newly elected president of the Standard Oil Company of California has spent practically his whole business life with this organization. He joined the company as a mechanical salesman at Seattle July 15, 1903, at the age of 27. He progressed steadily during the ensuing 37 years until at the time of his election to the presidency he was senior vice president of the company. He is one of the country's leading oil executives. He is a director of the American Petroleum Institute. He is also a member of the board of directors of the San Francisco Chamber of Commerce.

After serving two years at Seattle he was appointed a fuel oil salesman and engaged in the work of introducing the use of fuel oil in the Pacific Northwest. During this period he served in Portland and Tacoma as well as Seattle. In 1910 Mr. Collier was appointed assistant district sales manager in San Francisco; in 1912 district sales manager in San Francisco. In 1916 he was made assistant manager of sales, home office, San Francisco. He became manager of the Refined Oil and Naphtha Division in 1919 and in 1922 was appointed General Manager of Domestic, Refined and Lubricating Sales and served as a member of the Transportation, Sales and Administrative Committees. His next advance was to the directorate in 1924. He became a vice president in 1931.

Mr. Collier is now in Japan on a business trip and is expected to return to San Francisco the latter part of the month.

●

Purchasing Personnel-ities

By LEO S. BUSBY
Associate Editor,
Southwestern Purchasing Agent
GILMORE OIL COMPANY

"You can have your pink elephants, you can have your green snakes, and you're welcome to every one of your little purple alligators—but as for me, I'll string along with my roaring Red Lion."

Mark D. Payne doesn't tell you that in so many words but as he sits across from you at the purchasing agent's desk out at Vernon, the very mention of Gilmore brings an enthusiastic gleam to his eyes and a fond smile to his lips, and you're almost afraid he's going to turn around and start calling, "Here, kitty, kitty, kitty."

Like so many Southern Californians, Mark was born in Iowa, and like so many Iowans, he didn't stay there. And, quite contrary to formula, he didn't go to Long Beach. Instead, when Mark was very young, his family moved to South Dakota, in the very heart of the Sioux Indian country. Throughout his younger days, his classmates at school and his constant playmates were the dusky descendants of Sitting Bull. And perhaps that should sound a warning to over-enthusiastic salesmen who find themselves in the chair before his desk—there isn't a thing Mark doesn't know about sitting bull!

The readers of the California Oil World who have followed this column since its inception last November will remember an item in our first release about a young college half-back who kicked a record drop-kick of 63 yards to win for his team in the waning minutes of the fourth quarter.

Mark D. Payne was that lad's name on the varsity program. That was back in 1915, the year he graduated from South Dakota Wesleyan. That year and the year preceding, the records show

PROVED by FIELD SERVICE

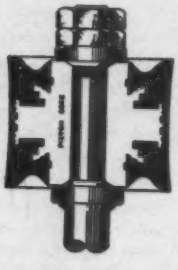
When we introduced the D & M Upset Piston Rod, some months ago, we pointed out the increased strength produced by the process of upsetting these rods.

Now, after months of satisfactory service under the most severe conditions, the advantage of this process is fully demonstrated and proved.

In addition, D & M Upset Rods are easier to handle —only 2 nuts to remove to change piston, instead of having to pull the rod from the pump.

BETTER PISTONS, TOO

Better support for the rubber is provided by a slight change in Core Construction, thus increasing the service obtained from D & M Pistons.



SOLD BY SUPPLY STORES EVERYWHERE

D&M MACHINE WORKS
TORRANCE, CALIF.
BRANCHES
HOUSTON · OKLAHOMA CITY

that he was rated all-state half-back for South Dakota.

In 1917, the World War claimed the attention of all hands, and who was Mark to keep his hands in his pockets? Forthwith, he doffed his civvies and donned the O. D. of the U. S. Army. For twenty months he was shipped from one camp to another with the apparently purposeless abandon of Uncle Sam at war. Seems they wanted to ship him overseas but they just couldn't find a seaport any place.

After Democracy was safely saved (Remember?) Mark went into the banking business in South Dakota. After twelve years of handling other people's dollars, he decided there just wasn't any sense to it, and like a lot of other chaps who have worked in banks, Mark went south. Without samples, however!

It was about 1931 that Mark arrived in this land of sunshine sometimes. He went to work in 1934 as a clerk in the purchasing department of the Gilmore Oil Company. Two years later, he was made assistant purchasing agent, a position he held until March 15th of this year. On that day, Don McPherson,

Mark D. Payne

Mark's boss, was promoted to the position of Assistant to Mr. Beesemyer, Vice-president of the company. Mark moved into the purchasing agent's office, and put his Mark on the door.

It has often been said that you can grasp something of a man's nature by observing the appointments of his office. In Mark Payne's office the pictures behind his desk immediately impress you. There are three very excellent reproductions of paintings of western life. Views of cowboy life on the range, at night under the stars, and as you admire them, Mark tells you how very true to life they are, and how he has enacted the very same scenes himself hundreds of times, and for a moment you think you detect the slightest tinge of longing in his voice.

As you look at Mark Payne, you can readily believe that he has spent many long years in the great outdoors. He is bronzed as an Indian, is built like an athlete, looks ten years younger than he says he is, and has the quiet amiability of one who has spent many nights under the brilliant western stars shining in the pictures. When Mark isn't attending rodeos, he's playing golf, and when it's football season, you can have the golf and I can have the rodeos.

Mark D. Payne is one P. A. who operates from the very center of things. His office is out at the refinery at Vernon and you can almost smell the Red Lion through the window; in fact, the place is a veritable den of Red Lions. By the way, we forgot to ask Mark what the middle initial "D" stands for. Could it possibly be "Daniel," do you suppose?

About the time Mark Payne was learning freshman football signals, a husky blonde baby boy was learning that to get quick results in the way of a round of the milk that satisfies, he really had to put something on the bawl. Orville Allison is Mark Payne's assistant. He first looked out on this crazy world in 1912, and for his first point of view chose Rocky Ford, Colorado.

Orville's been a Californian for twenty years, and has been with Gilmore since 1930. He started as a mail boy, spent a year and six months in the traffic department, and after a three year stretch in accounting, graduated to the purchasing department.

High Pressure Pipe Leak Repaired by Arc Welding

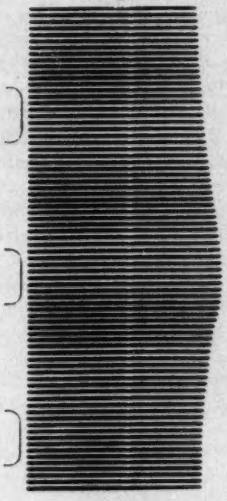
To stop a leak in an 8-in. oil pipe-line operating at a pressure of 800 lbs. per sq. in. requires ingenuity. That's why our hats are off to a welding operator who, equipped with a 300 ampere, gasoline-engine-driven G-E welder with W-20 electrodes, did the job in a simple efficient way.

To make the repair, a collar of steel was wrapped around the pipe at a point a little beyond the leak and the ends of the collar were butt welded together. Next, the collar was slipped along the pipe until it covered the leak. To permit the leaking oil to escape without interfering with welding operations, the collar was provided with a tapped drain hole midway between its ends. Upon the completion of both circumferential collar-to-pipe welds, a pipe plug was screwed into the drain and the repair was completed.

Dale Co. Introduces New Well Temperature Recorder

A new highly developed temperature recording instrument for use in determining temperature variations in both flowing and shut-in wells, is announced by C. R. Dale Co., 6670 Lexington Avenue, Los Angeles, Calif. The new instrument, designated the Dale Oil Well Temperature Recorder, produces a continuous record of temperature, detecting variations as small as 1/10th of 1° Fahrenheit, and records the temperature

Figure 1



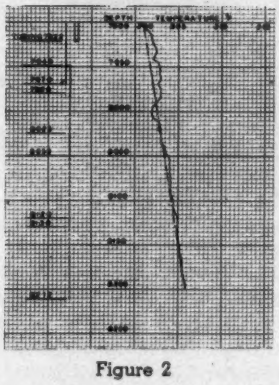


Figure 2

photographically on film. The film record is photographically reproduced on paper in large scale for detailed study. In designing and developing the Dale Temperature Recorder special emphasis was placed on obtaining extremely accurate records of slight temperature variations.

The instrument consists of a fluid-tight case 1-11/16 inches in diameter by an overall length of 5½ feet, including an integral sinker, and weighs 25 pounds. These dimensions permit the instrument to be run through tubing, and facilitate its use in flowing wells where insertion must be made through a lubricator. The case contains dry-cell batteries as a source of power, in addition to the photographic unit and temperature indicating device. The instrument is run on an ordinary measuring line, using the ordinary light piano wire hoist commonly used for running pressure recording and surveying instruments and other light devices. A conductor cable and outside source of power are not required.

Temperatures ranging from 50 degrees to 300 degrees F. are recorded on a 16mm photographic film by exposing the film to a light source which is controlled by a thermal light valve. The temperature record is made continuously while the film travels at a uniform rate of approximately ¾ of an inch per minute over the light valve. This results in a clearly defined film record being obtained by running the instrument at a speed of from 1200 to 2000 feet per hour (20 to 33 feet per minute) through the zone to be studied in the well. Film travel is synchronized with a stop watch at the surface and the rate of descent of the instrument is accurately checked and recorded. As exposures are made at the rate of 2 per second, the film recordings are readily correlated with the depth at which each exposure is made, and depth of determinations are easily identified when studying the finished record.

It is well known that the geothermal gradient in any oil field is a relatively flat curve. The normal temperature rises at a somewhat constant rate from the surface of the earth to whatever depth is reached in oil well drilling. It is also established that well conditions are indicated by changes in temperature, often as little as one degree, and rarely exceeding a few degrees through any single zone. When accurately recorded, these minute changes can be readily detected due to the regularity of the geothermal gradient. These facts are used to particular advantage in the design of the Dale Temperature Recording Instrument. The temperature is recorded in the form of lines across the film, as shown in Figure 1, the lines varying in length for each fraction of a degree.

The procedure of making a temperature survey in a flowing well with the Dale Temperature Recorder is much the same as that followed in running a pressure recorder, except that the Dale Recorder is kept moving at a constant speed in order to produce a continuous record.

Result of survey in a high-pressure well making free gas is shown in Figure 2. This well, capable of producing several thousands of barrels daily, was flowing at approximately 175 barrels daily before being shut in for the temperature survey. Experience has shown that in wells making free gas best results in defining the gas zones are obtained when the well has been completely shut in for the 24 hours previous to running the survey. In Figure 2 the dot-dash line represents the geothermal gradient for the field, and the location of the free gas zone is clearly indicated by the drop in temperature recorded between 7985 feet and 8010 feet. This temperature drop was caused by the transfer of heat from the fluid column to the zone which had been producing free gas.

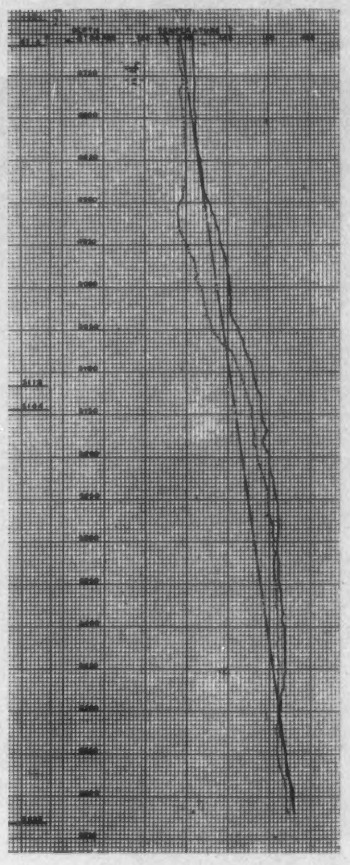


Figure 3

Surveys made in both flowing and shut-in wells not making free gas disclose no drop in temperature such as shown in Figure 2, as all of the gas is in solution in the well fluid.

Two surveys made in a well with a high gas/oil ratio are shown in Figure 3. The broken line shows the temperature recorded while the well was shut in, the considerable drop noted between 4880 and 5070 indicating the zone from which the free gas was being produced. This zone was not as clearly indicated on the survey made while the well was flowing (shown by the solid line) because of the diffusing effect of the oil flowing upward from the zones below. The dot-dash line is the geothermal gradient for the field.

Although the examples given above are taken from high pressure flowing wells, the Dale Oil Well Temperature Recorder is used in pumping and drilling wells

also. Among the many applications found for accurate temperature surveys in drilling wells are: locating the point at which circulation is lost, locating gas zones, and studying the temperature of the circulating fluid. Temperature logging through the casing is another important use of the Dale Temperature Recorder.

You are reading the Pacific Coast oil men's home paper.

Lane-Wells Issues New Packer Bulletin

Lane-Wells Co., Los Angeles, has just issued a new bulletin on their Packers, Liner Hangers and Bridging Plugs. Descriptions are given of the important application of Lane-Wells Packers as developed by oil company engineers in conjunction with the Lane-Wells engineering staff. Complete tables of sizes, weights, parts, are given as well as diagrams to show the operation of the different types of Packers.

Featured is the new Lane-Wells Quinta-Seal Circulation Type Packer which has five flat side-wall rings of neoprene or rubber to provide ample bearing surface for a positive fluid seal and resistance to pressures. Maximum area of the heat-treated alloy steel slips give a positive grip without cutting. The body of strong seamless steel casing or tubing has the same inside diameter as the string on which the Packer is run. Extra large circulation area between the packing assembly and the tubing is provided to permit it to be set and reset as often as required, without swabbing action, even in heavy rotary mud. It can be run in and out at normal speeds.

The new Lane-Wells Drillable Bridging Plug is designed for fast operation, accurate depth placement and absolute pack-off in a permanent or temporary location. The Plug is run in place and set by a Lane-Wells Gun Perforator unit. It will stay where it is set and excessive pressures from above or below only tend to set the slips tighter. An automatically expanded neoprene sleeve, highly resistant to oil and gas, provides the pack-off. Cast iron construction makes the plug drillable.

Copies of this new Packer Bulletin can be obtained through any Lane-Wells branch or by writing direct to Lane-Wells Co., 5610 S. Soto St., Los Angeles, Calif.

This well in the old Los Angeles field, located in the 2300 Block on West 4th Street and surrounded by apartment houses, was drilled by Joe Royer in 1897. It was recently cleaned out to its original depth by Knob Hill Oil Co. and a string of 6⅝-inch casing run in and cemented. The formation tester used to make the water shut-off test according to modern requirements can here be seen just as it came out of the hole. The well was originally drilled with cable tools but was redrilled with a modern core drilling outfit. Reading from left to right: C. D. Lindstrom; "Pop" Whisler, driller; E. F. Johnston of M. O. Johnston Oilfield Service; H. C. Todd, rotary helper; Joe Clark, tool pusher; Jack Thompson, helper. E. F. Johnston, who supervised the testing, was born in the same year the well was drilled.

(Continued from Page 31)

covered by a group of experienced oil men who knew how to pick a favorable spot to try the machine. Both companies subsequently nearly wrecked themselves drilling dry holes located by their instruments.

Several recognized methods of geophysically determining oil structures exist and these should in no way be confused with the doodle-bug. The geophysicist considers himself not as an infallible prophet but as the highly trained specialist aide to the geologist, who blundering as he is, is yet the best man to consult when trying to find oil.

By a vote of 396 to 6 the House on June 11 passed the National Defense Tax Bill, which had been reintroduced and assigned a new number, H. R. 10039. As passed the bill raised the taxes on gasoline to 1½ cents per gallon and oil lubricating oil to 4½ cents per gallon.

Detailed engineering and chemical reasons for changing motor oil at regular intervals, summer and winter, have been released by the new lubrication committee of the American Petroleum Institute.

Hal R. Roodhouse Co. Export Representative

Hal R. Roodhouse has resigned his position as export manager for Pomona Pump Co. and announces the formation of the Hal R. Roodhouse Co. and its entry into the export representative field. Offices are located in the Chamber of Commerce Building in Los Angeles, Calif.

The Hal R. Roodhouse Co. will specialize in handling water well drilling machinery, well casing, line pipe for the transmission of water and gas, and a general line of well drilling tools, equipment and supplies. Among the manufacturers represented are:

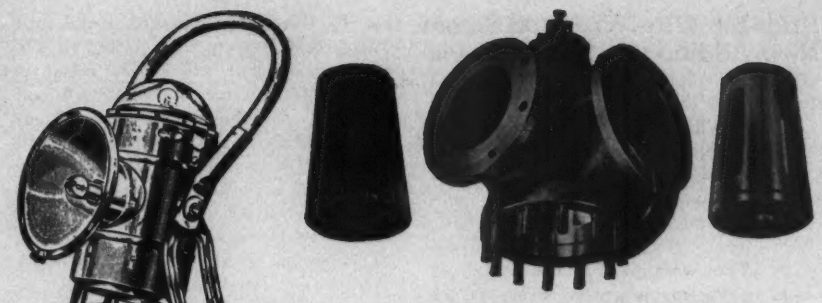
Roscoe Moss Co. of Los Angeles, manufacturers of water well drilling machinery, automatic electric welded double well casing and other well drilling equipment; the Southern Pipe and Casing Co. of

Hal R. Roodhouse

Azusa, Calif., manufacturers of automatic electric welded water well casing and line pipe, and corrugated culvert.

Mr. Roodhouse has had long experience in export work in the water development field, having worked with the Pomona Pump Co. for 12 years. Two years were spent in the engineering department and the following ten years as manager of the export department. In the course of his work with Pomona Pump Co. he spent a great deal of time in the field, acquiring a thorough knowledge of water development work, and a wide acquaintance with firms and individuals concerned in this activity.

In addition to their work as export representatives of well drilling and producing equipment manufacturers, Hal R. Roodhouse Co. will cooperate with well drilling contractors and those in charge of both public and private water development projects in an advisory capacity.



View at left shows merchromed plug before machining; center view, body; at right, plug after machining.

Features Found in Ecolite Safety Lanterns

Reflector: Like the warning shaft of light from a lighthouse, the new large die-cast reflector on the side of this dual lantern produces a powerful focusing spotlight, its range being approximately 1500 ft. Entire large reflector and lens assembly may be removed without touching its highly polished surface when replacing lamp bulb. The "top light" with its concave reflector adapts itself readily for diffusion of light in an emergency. A ruby red lens may be used in the event a warning signal becomes necessary.

Flexibility: Ecolite lanterns have always possessed the "pivot" feature—making it possible to concentrate either of the two lights at any degree of a circle. The handle and base also "swing on a pivot."

Switch mechanism: Patented wireless positive two-light contact plate as used on Ecolite Railroad lanterns. Brass used throughout to prevent corrosion. Seamless drawn steel body; double "baked-on" aluminum plus lacquer finish; sparkproof octagonal brass base; rattan handle guarantees a solid grip.

New Valve Development Temperatures to 1000°

After more than two years of factory and field testing, a new valve application is announced. A novel process known as Merchrome coating has been developed by Merco Nordstrom Valve Co. It permits a lubricated plug cock valve to successfully handle services where the temperatures run as high as 1000° F. and where, according to Nordstrom engineers, the operating conditions make the ordinary type of valve totally inadequate.

While the use of Merchrome-coated valves is principally for refineries on hot oil and vapor lines, such as cracking, coking and topping units, and for mud lines to combat abrasion and erosion, the Merchrome application is expected to gain wide acceptance in chemical plants and in industries where stainless steel valves have limitations.

The Merchrome coating process is a development in which a welded coating is applied to the rotating surfaces of the plugs and bodies and in some cases other parts of the valves. This coating is a complex metal alloy of extreme hardness and corrosion-resistant. Another invaluable characteristic of this coating is said to be its extremely low coefficient of friction. The hardness of Merchromed surfaces is approximately 54 on the Rockwell C Scale and this alloy has the property of maintaining this hardness practically unimpaired at temperatures of 1000° F.

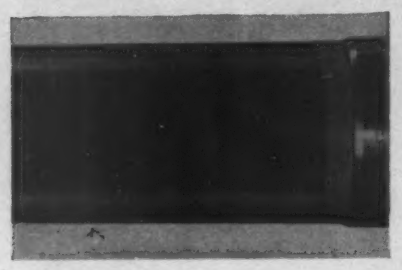
The corrosion resistance of the Merchrome coating is approximately equal to that of the stainless steels and for this reason it makes an ideal solution of the problem of preventing the galling and scoring of the sliding surfaces of a stainless steel plug cock without sacrificing its resistance to corrosion. The Merchrome is said to form an inseparable bond which may be applied in any thickness. In services where stainless steel valves such as the KA2S variety are required, the Merchrome coating makes this practicable for the higher temperatures and pressure services, such as in the chemical industry, as well as for refinery service.

Another interesting development is included. For high pressure service these valves are "hot-lapped." The plugs are lapped under heat into the bodies at the temperature corresponding to the service for which they are intended. This provides a means of securing an extremely accurate fit between the plugs and bodies at the operating temperature and insures extremely smooth operation. The valves are tested before shipment with hot oil at temperatures up to 600° F., and under a pressure equivalent to the intended operation pressure.

A new bulletin describing Merchromed Valves may be obtained by writing to Merco Nordstrom Valve Co., 400 Lexington Ave., Pittsburgh, Penna.

Drillable Wire-Wrapped Screen New Addition to Security Line

The development of a new bonding process by Security Engineering Co., Inc., of Whittier, Calif., makes it possible for operators to specify drillable Securaloy when ordering standard types of wire-wrapped screen. Security supplies Securaloy pipe and Securaloy wire from stock suitable for wrapping. The wrapping of the screen is done by the manufacturer whose screen is specified. The Houston Plant of Security has installed new metal-spray equipment especially constructed to bond the wire after it has been wrapped.



Unretouched photo: Section of new SECURALOY Wire-wrapped screen liner. Photo shows metal sprayed bonding surface.

This addition provides the industry with a completely drillable wire-wrapped screen by which Security brings to operators the advantages of low-cost removal which facilitate repairs or possible future drilling operations.

The bonding machine developed by Security engineers consists of a roller conveyor over which the wire-wrapped screen travels during the bonding process. The screen travels from right to left, passing through three principle stages — grooving, sand-blasting and spraying.

During the first stage, as the wire-wrapped screen passes under the high-speed motor-driven milling cutter, a series of small grooves are milled as a strip ½ inch wide and lengthwise of the screen to serve as a bonding surface for the sprayed metal. The screen automatically travels at suitable speeds which can be varied to meet individual needs.

Overall view of finishing equipment for manufacturing Security Wire-wrapped screen at the Houston Plant.

The newly milled area is sand-blasted to provide minute apertures in the surface to which the sprayed metal can adhere. The screen then passes to the next compartment where this metal is applied. Metal wire fed through a metal spray-gun, is subjected to an oxygen-propane flame where it becomes molten and is forcibly sprayed on the grooved surface of the Securaloy wire where it instantly adheres, thus bonding the consecutive turns securely in place.

This completes the bonding operation except for repeated applications of sprayed metal to give additional strength to the bonding strips which run full-length of the wire-wrapped surface. The four such metal-sprayed strips are equally spaced about the circumference of the screen. Lengths of standard size screen up to twenty feet can be accommodated in the new Security Wire-wrapped screen bonding machine.

Close-up of metal spray device used in bonding SECURALOY Wire-wrapped screen.

Tubbs Cordage Chief on Job 50 Years

Edward Everett, General Manager, Tubbs Cordage Company, completes fiftieth year of service.

On April 1, 1890, a clear-eyed, clear thinking young man joined the sales staff of the San Francisco headquarters of Tubbs Cordage Co., pioneer rope manufacturers of the West.

One of the first assignments given this young man, Edward Everett, was the coverage of the newly developed oil fields in California and, a few years later, the fields throughout the Mid-Continent. From almost the first days when the abundance of "black gold" began to flow, Edward Everett was a familiar figure among the growing acres of derricks, helping and advising in the selection of cordage best suited for the difficult tasks of early drilling.

In a comparatively short number of years, Edward Everett's energy and zeal received its recognition. He was recalled from the field and appointed as General Manager of the Tubbs Cordage Co. with headquarters in San Francisco.

But another recognition of the important part Everett had played in the development and standardization of oil field cordage was to be his. He became one of the pioneer members of the A. P. I. committee on specifications for oil field rope and for nearly half a century has been recognized as one of the country's outstanding authorities in this field.

Among his hobbies, Mr. Everett still maintains his love of fishing. At one time, he was one of the champion dry fly casters of the United States, and even yet can lure the most wary trout to his creel.

Today, after fifty years of service, Mr. Everett still is actively in the harness. From his residence in Palo Alto, he daily commutes to the Tubbs Cordage Co. general offices at 200 Bush Street, San Francisco, where the "youngsters" of lesser service call on him for advice and assistance with cordage problems.

Handbook of U. S. Stainless and Heat Resisting Steels

U.S.S. Stainless and Heat Resisting Steels for the Petroleum Industry is the title of a fully illustrated 52-page, 2-color, 8½x11" wire bound handbook just issued by Carnegie-Illinois Steel Corp. in conjunction with American Steel & Wire Co. and National Tube Co., all subsidiaries of United States Steel.

In addition to discussing the wide range of both hot and cold end applications of the various types of stainless and heat resisting steels in the petroleum industry, laboratory and field experience is summarized. A special section in the book is devoted to a detailed discussion of the technical and application problems involved in field lining pressure vessels with stainless steel sheets and strip. Detailed technical data in tabular form is included for nine different types of flat rolled stainless and heat resisting steels and for fifteen different types of stainless and heat resisting tubular products, together with a complete summary of corrosion resistance data for four types of stainless steels exposed to various reagents in an extensive series of laboratory tests.

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Oil Men's Calendar

Calif. Natural Gasoline Association. **Los Angeles Chapter**—Meets 1st Thursday Each Month, Barker Bros. Bldg., Los Angeles—Dinner at 6:00 (Optional). **Taft Chapter**—Meets Third Thursday Each Month.

American Society of Mechanical Engineers—Los Angeles Section—Meets 2nd Thursday Each Month—Barker Bros. Bldg., Los Angeles. Dinner at 6:30 (Optional).

September

18-19-20—Annual Convention of the Pacific Coast Gas Ass'n., Hotel Del Coronado, Coronado, Calif.

October

7-12—Annual Convention of American Gas Ass'n., Atlantic City, N. J.

Price Co. Issues Kern Map Atlas

Just issued by Earl M. Price & Co. of Bakersfield is a complete new map atlas containing 105 pages covering all producing and prospective oil lands in Kern County. Revised to July 1, 1940, the new book will furnish the independent operator and lease man a set of maps unexcelled even by those prepared and maintained by major companies

Intervention of Italy in the European war is expected to impede the shipment of oil to the Allies from Iran and Iraq, which has been their main source of supply since the beginning of the war.

Fuel experts of the National Adivsory Commission on National Defense and the National Advisory Committee for Aeronautics are studying the fuel requirements of the expanded air force contemplated under the national defense plan.

California Crude Oil Production

Two Weeks Ended June 28, 1940

	June Daily Quota	Average Daily Production	Excess
San Joaquin Valley			
Belridge—North	11,251	10,750	*501
Belridge—South	2,146	2,137	*9
Buena Vista	16,196	15,869	*329
Canal	5,883	5,952	69
Coalinga-E. (Eocene)	16,441	14,549	*1,892
Coalinga—East-West	15,122	9,760	*5,362
Cole's Levee	5,095	5,708	613
Edison	2,242	2,293	51
Elk Hills	6,848	12,223	5,375
Fruitvale	5,692	4,220	*1,472
Greeley	4,339	3,828	*511
Kern Front	7,263	6,742	*521
Kern River	6,843	4,236	*2,607
Kettleman No. Dome	34,854	47,331	12,477
Lost Hills	3,894	3,680	*214
McKittrick	3,766	3,646	*120
Midway	36,673	25,970	*10,703
Mount Poso	9,228	9,590	362
Mountain View	7,789	7,984	195
Rio Bravo	8,600	7,568	*1,032
Round Mt. and Coffee Canyon	6,925	7,740	815
Ten Section	9,481	9,561	80
Wasco	1,723	1,964	241
Other Fields	3,751	3,907	156
TOTAL	232,047	227,206	*4,839
Coastal Counties			
Elwood	3,473	3,632	159
Rincon	2,503	3,840	1,337
Santa Maria	5,892	3,314	*2,578
Gato Ridge	2,194	2,109	*85
Santa Maria Valley	17,287	16,517	*770
Santa Paula-Newhall	5,997	6,623	626
Ventura Avenue	32,029	33,879	1,850
Other Fields	5,319	5,738	419
TOTAL	74,694	75,652	958
Los Angeles Basin			
Alamitos-Seal Beach	7,236	6,871	*367
Brea-Olinda	8,068	5,481	*2,577
Coyote—East	3,518	3,901	383
Coyote—West	9,962	6,752	*3,210
Domingues	17,742	21,900	4,158
El Segundo	2,162	2,262	100
Huntington Beach—New and Old	22,598	24,353	1,756
Inglewood	12,063	11,256	*807
Long Beach	39,413	44,096	4,683
Montebello	5,838	4,915	*923
Montebello-West End	18,173	16,640	*1,533
Playa del Rey	3,921	4,052	131
Richfield	7,010	8,140	1,130
Rosecrans-Athens	8,317	10,460	2,143
Santa Fe Springs	23,672	26,471	2,799
Torrance	5,136	5,135	*1
Torrance "34" and "D & B"	5,983	6,159	176
Wilmington	79,307	85,971	6,664
Other Fields	4,160	4,217	57
TOTAL	284,269	299,031	14,762
STATE TOTAL	591,010	601,891	10,881

*—Shortage.